CHAPTER 6
SCHEMATICS

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AMX-110 PANEL IDENTIFICATION TABLE

PANEL	COMPONENT PREFIX
X–RAY CONTROL CABINET	1–
INVERTER ASSEMBLY	2–
CARD RACK ASSEMBLY	3–
Timer and Overload Board	3A1–
Filament & MA, Regulator Board	3A2–
500 Hz Inverter Driver Board	3A3–
Time Delay Board	3A4–
60 Hz Inverter Driver Board	3A5–
Pulse Board	3A6–
BATTERY CHARGER ASSEMBLY	4–
Battery Charger CKT. Board	4A1–
OPERATOR'S PANEL	5–
AMX CHASSIS	6–
H.V. TRANSFORMER	7–
INTERCONNECTION PANEL	8–
MOTOR DRIVE ASSEMBLY & BOARD	8A1–
DRIVE ASSIST PANEL	8A2–
X–RAY TUBE UNIT	None
BATTERY ASSEMBLY	None
COLLIMATOR ASSEMBLY	4–

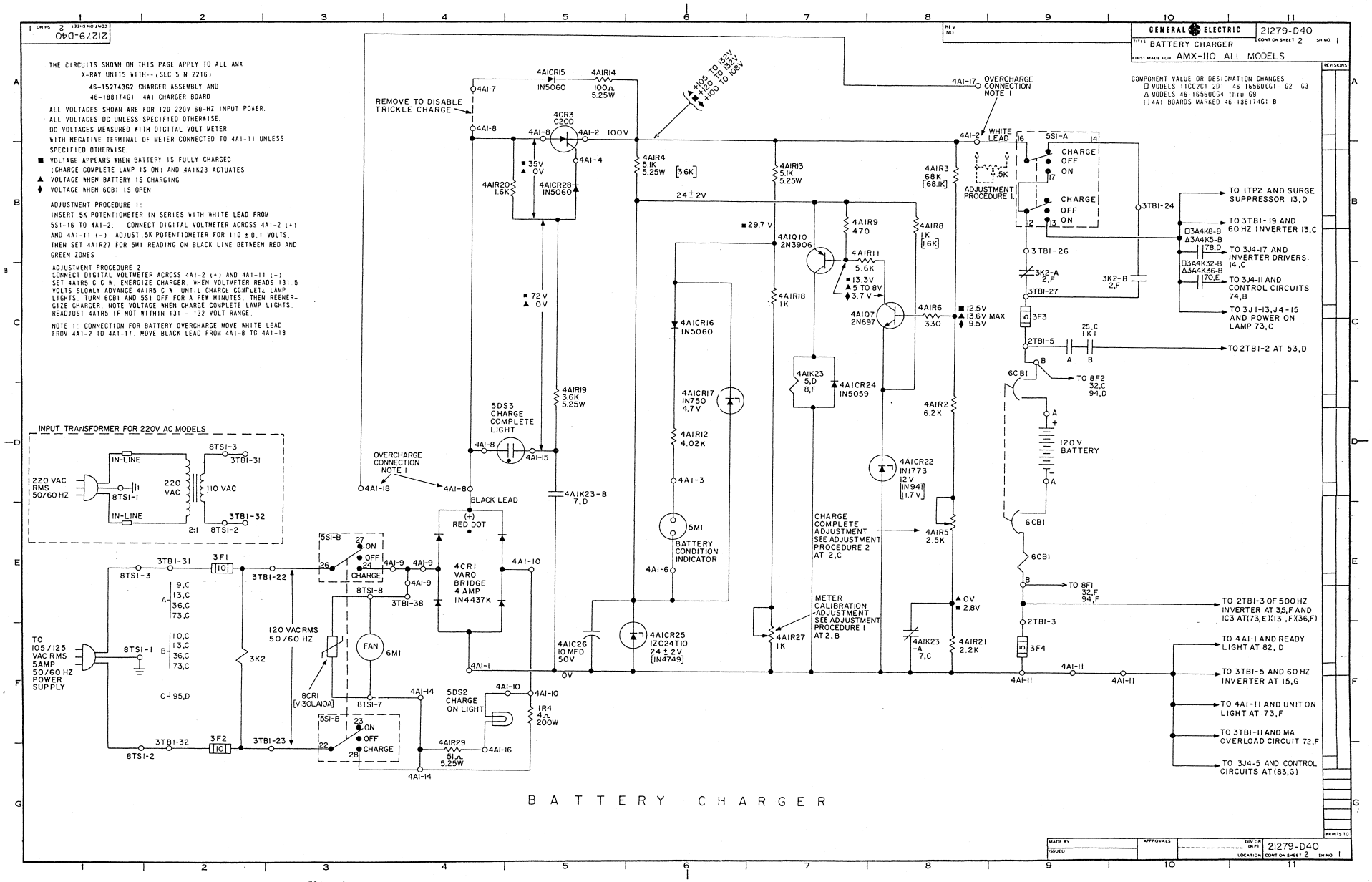
RELAY COIL	RELAY NAME AND LOCATION	ENERGIZED BY	CONTACT	CONTACT FUNCTION	SCHEMATIC LOCATION
1K1 (115 VAC) (25C)	500 Hz Inverter safety turn-off	Output of 60 Hz inverter when handswitch ROTOR is pressed	A B	Connect 500 Hz inverter to battery power	9,C 13,D 37,C
3K1 (24 VDC) (77,C)	60 Hz inverter control	Closing 3A4K32-A by depressing handswitch ROTOR button	A B C	Connect 60 Hz inverter to battery power	14,B 36,B 73,B
3K2 (115 VAC) (2,F)	Battery charger interlock	Connecting charger to 115-VAC power	A B C	Disconnect battery power from X-ray control circuits when battery is being charged Connect battery to charger when 5S1-A is OFF only Disconnect motor drive when charge cord is pulled in	13,C 9,C 36,C 73,C 13,C 10,C 36,C 73,B 95,D
3K3 (83,D)	500 Hz inverter 3 sec. safety turn-off	Depressing handswitch X-ray button	A	Opens supply voltage to 1K1 after 3 seconds	25,C
3A1K7 (24 VDC) (83,C)	X-Ray exposure start	Depressing handswitch X-RAY button	A	Remove the short across gate to cathode of 3A1CR28 and allow it to be triggered on	86,F

AMX-110 MODELS 11CC2C1, 11CC2D1, 46-165600G1 THRU G3
WITH 3A4 BOARD 46-148776G1 AND 3A6 BOARD 46-154032G1
REFER TO SCHEMATIC SHEETS 2A AND 8A

3A4K2 (24 VDC) (79,C)	Inverter function sensor and exposure start time delay	Proper response to sensors in inverter and filament and rotor circuits and completion of time delay	B	Close circuit to ready light and prepare exposure start circuits	82,B
3A4K4 (24 VDC) (82,C)	Turn-off capacitor power disconnect	Closure of 3A4K2	A	Opens power supply used to charge exposure stop capacitors 1C1 and 1C2 during rotor start time delay	39,C
3A4K8 (24 VDC) (76,C)	60 Hz and 500 Hz Inverter driver turn on	Time delayed circuit after depressing handswitch ROTOR button	B	Connects battery power to inverter driver circuits	10,C 14,C 37,B 74,B
3A4K32 (24 VDC) (75,E)	Preparation	Depressing handswitch ROTOR button	B	Connect inverter driver and exposure control circuits	10,C 74,B

RELAY COIL	RELAY NAME AND LOCATION	ENERGIZED BY	CONTACT	CONTACT FUNCTION	SCHEMATIC LOCATION
		AMX-110 MODELS 46-165400G4 THRU G9 Below SN. 341608 WITH 3A4 BOARD 46-178772G1 AND 3A6 BOARD 46-178752G1 REFER TO SCHEMATIC SHEETS 2B AND 8B			
3A4K2 (24 VDC) (79,B)	Inverter function sensor and exposure start time delay	Proper response to sensors in inverter and filament and rotor circuits and completion of time delay	B	Close circuit to ready light and prepare exposure start circuits	81,B
3A4K5 (24 VDC) (82,C)	Turn-off capacitor power disconnect	Closure of 3A4K2	A	Opens power supply used to charge exposure stop capacitors 1C1 and 1C2 during rotor start time delay	39,C
3A4K22 (24 VDC) (76,C)	60 Hz and 500 Hz Inverter driver turn on	Time delayed circuit after depressing hand-switch ROTOR button	B	Connects battery power to inverter driver circuits	10,C 14,C 37,B, 74,B
3A4K36 (24 VDC) (70,E)	Preparation	Depressing handswitch ROTOR button	B	Connect inverter driver and exposure control circuits	10,C 69,B
		AMX-110 – ALL MODELS Below SN. 341608			
4A1K23 (24 VDC)	Charge complete shut-off	Charging battery to 131-132 V	A	Change charger turn on point so the battery must discharge awhile before the charger turns on again	8,F
(7,C)			B	Turn on CHARGE COMPLETE lamp turn off 4CR3	5,D
6CB1 9,E 60,D 12,F 72,E 35,F 94,F 32,E	Circuit breaker	Current overload	–	Disconnects battery when battery current drain is excessive or	12,E 32,D 9,D 35,D 72,D 94,D
8K1 (32,F)	Collimator light	Field light switch on Collimator	A	Prevents exposures when Collimator light is on by opening circuit for 1K1	25,D
32,F			B	Complete Primary transformer (8T1) Collimator light circuit	29,C 29,E
			D	Picks up relay 3A4K32 or 3A4K36 to apply power to 60 Hz inverter	75,E
			C	Prevent power to stator when Collimator light is on	25,D
		AMX-110 MODELS WITH DRIVE ASSIST FEATURE REFER TO SCHEMATIC SHEET 10B			
8A2K1 95, C	Drive Assist	Drive Assist Push Button 6S5	B	Shorts 8A2R2 to increased motor torque	103,C

RELAY COIL	RELAY NAME AND LOCATION	ENERGIZED BY	CONTACT	CONTACT FUNCTION	SCHEMATIC LOCATION
		AMX-110 MODELS 46-165400G4 THRU G9 WITH 3A4 BOARD 46-178772G1 AND 3A6 BOARD 46-178752G1 REFER TO SCHEMATIC SHEETS 2B and 8B SERIAL NUMBERS 341608 AND ABOVE			
3A4K2 (24 VDC) (79,B)	Inverter function sensor and exposure start time delay	Proper response to sensors in inverter and filament and rotor circuits and completion of time delay	B	Close circuit to ready light and prepare exposure start circuits	81, B
3A4K5 (24 VDC) (82, C)	Turn-off capacitor power disconnect	Closure of 3A4K2	A	Opens power supply used to charge exposure stop capacitors 1C1 and 1C2 during rotor start time delay	39, C
3A4K22 (24 VDC) (76, C)	60 Hz and 500 Hz Inverter driver turn on	Time delayed circuit after depressing had-switch ROTOR button	B	Connects battery power to inverter driver circuits	10,C,14,C 37,B,74,B
3A4K36 (24 VDC) (70,E)	Preparation	Depressing handswitch ROTOR button or COLL. FIELD LITE	B	Connect inverter driver and exposure control circuits	10,C 69,B
		AMX-110—ALL MODELS (SERIAL NUMBERS 341608 AND ABOVE)			
4A1K23 (24 VDC) (7,C)	Charge complete shut-off	Charging battery to 131-132V	A	Change charger turn on point so the battery must discharge awhile before the charger turns on again	8,F
			B	Turn on CHARGE COMPLETE lamp turn off 4CR3	5,D
6CB1 9,E 60,D 12,F 72,E 35,F 94, F 32,E	Circuit breaker	Current overload	—	Disconnects battery when battery current drain is excessive or	12,E 32,D 9,D 35,D 72,D 94, D
8K1 (32, F	Collimator light	Depressing handswitch ROTOR BUTTON	B	Prevents exposures when Collimator light is on by opening circuit for 1K1	25,D
32, F			A	Complete Primary transformer (8T1) Collimator light circuit	29, C 29, E
			E	Picks up relay 3A4K32 or 3A4K36 to apply power to 60 Hz inverter	75, E
			D	Prevent power to stator when Collimator light is on	25, D
		AMX-110 MODELS WITH DRIVE ASSIST FEATURE REFER TO SCHEMATIC SHEET 10B			
8A2K1 95, C	Drive Assist	Drive Assist Push Button 6S5	B	Shorts 8A2R2 to increased motor torque	103, C

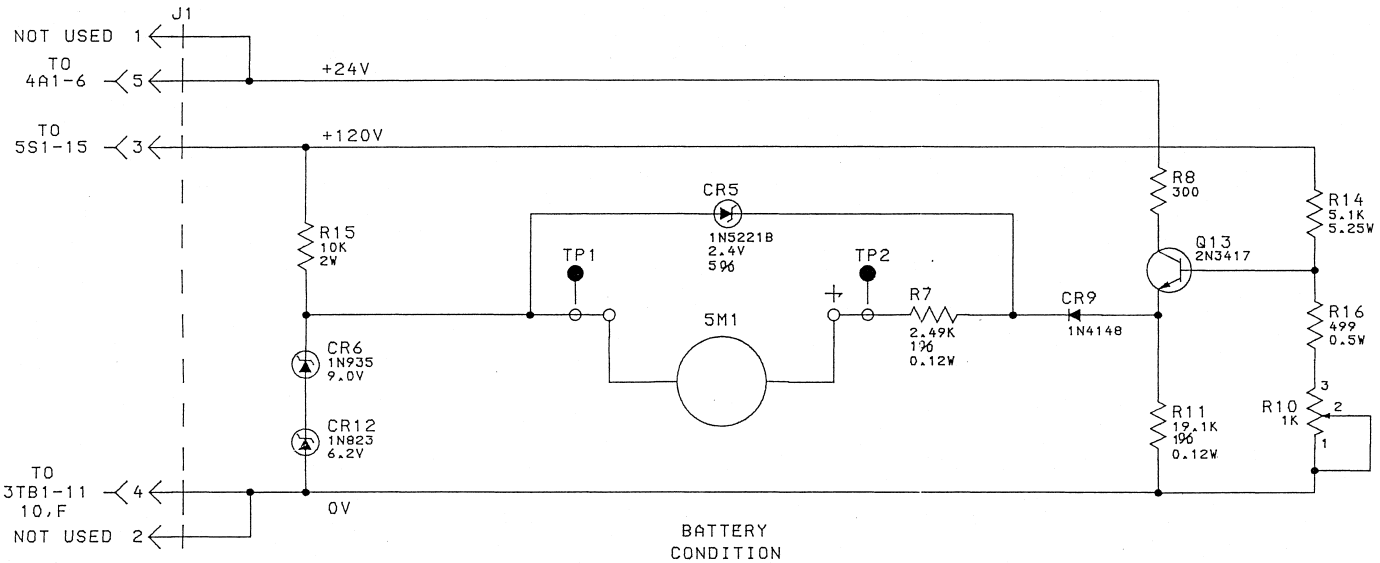

21279-D40
GENERAL ELECTRIC
21279-D40
TITLE BATTERY CHARGER
FIRST MADE FOR AMX-110 ALL MODELS
THE CIRCUITS SHOWN ON THIS PAGE APPLY TO ALL AMX X-RAY UNITS WITH--(SEC 5 N 2216)
46-152743G2 CHARGER ASSEMBLY AND
46-188174G1 4A1 CHARGER BOARD
ALL VOLTAGES SHOWN ARE FOR 120 220V 60-HZ INPUT POWER.
ALL VOLTAGES DC UNLESS SPECIFIED OTHERWISE.
DC VOLTAGES MEASURED WITH DIGITAL VOLT METER WITH NEGATIVE TERMINAL OF METER CONNECTED TO 4A1-11 UNLESS SPECIFIED OTHERWISE.
■ VOLTAGE APPEARS WHEN BATTERY IS FULLY CHARGED (CHARGE COMPLETE LAMP IS ON) AND 4A1K23 ACTUATES
▲ VOLTAGE WHEN BATTERY IS CHARGING
♦ VOLTAGE WHEN 6CB1 IS OPEN
ADJUSTMENT PROCEDURE 1:
INSERT 5K POTENTIOMETER IN SERIES WITH WHITE LEAD FROM 5S1-16 TO 4A1-2. CONNECT DIGITAL VOLTMETER ACROSS 4A1-2 (+) AND 4A1-11 (-). ADJUST 5K POTENTIOMETER FOR 110 ± 0.1 VOLTS. THEN SET 4A1R27 FOR 5W1 READING ON BLACK LINE BETWEEN RED AND GREEN ZONES
ADJUSTMENT PROCEDURE 2
CONNECT DIGITAL VOLTMETER ACROSS 4A1-2 (+) AND 4A1-11 (-) SET 4A1R5 C.C.W. ENERGIZE CHARGER. WHEN VOLTMETER READS 131.5 VOLTS SLOWLY ADVANCE 4A1R5 C.W. UNTIL CHARGE COMPLETE LAMP LIGHTS. TURN 6CB1 AND 5S1 OFF FOR A FEW MINUTES. THEN REENERGIZE CHARGER. NOTE VOLTAGE WHEN CHARGE COMPLETE LAMP LIGHTS. READJUST 4A1R5 IF NOT WITHIN 131 - 132 VOLT RANGE.
NOTE 1: CONNECTION FOR BATTERY OVERCHARGE MOVE WHITE LEAD FROM 4A1-2 TO 4A1-17. MOVE BLACK LEAD FROM 4A1-8 TO 4A1-18
COMPONENT VALUE OR DESIGNATION CHANGES
□ MODELS 11CC2C1 201 46 165600G1 G2 G3
Δ MODELS 46 165600G4 THRU G9
[] 4A1 BOARDS MARKED 46 188174G1 B
REMOVE TO DISABLE TRICKLE CHARGE
4A1CR15 IN5060
4A1R14 100Ω 5.25W
4CR3 C20D
4A1R4 5.1K 5.25W [3.6K]
4A1R3 5.1K 5.25W
4A1R20 1.6K
4A1CR28 IN5060
4A1R3 68K [68.1K]
ADJUSTMENT PROCEDURE 1
5K
WHITE LEAD
5S1-A
CHARGE OFF ON
24 ± 2V
4A1Q10 2N3906
4A1R9 470
4A1R8 1K [1.6K]
4A1R11 5.6K
4A1R18 1K
4A1CR16 IN5060
4A1Q7 2N697
4A1R6 330
3K2-A 2,F
3K2-B 2,F
3F3
4A1CR17 IN750 4.7V
4A1R12 4.02K
4A1K23 5,D 8,F
4A1CR24 IN5059
4A1R2 6.2K
4A1CR22 IN1773 12V [IN941] [11.7V]
4A1R5 2.5K
4A1R27 1K
4A1K23-A 7,C
4A1R21 2.2K
4A1C26 10 MFD 50V
4A1CR25 IZC24T10 24 ± 2V [IN4749]
4A1R9 3.6K 5.25W
5DS3 CHARGE COMPLETE LIGHT
4A1K23-B 7,D
5MI BATTERY CONDITION INDICATOR
4A1R29 51Ω 5.25W
5DS2 CHARGE ON LIGHT
4A1R4 4Ω 200W
6CB1
120 V BATTERY
3F4
INPUT TRANSFORMER FOR 220V AC MODELS
220 VAC RMS 50/60 HZ
IN-LINE
8TSI-1
8TSI-3
3TBI-31
220 VAC
110 VAC
3TBI-32
8TSI-2
2:1
3F1
3F2
4CR1 VARO BRIDGE 4 AMP IN4437K
FAN 6MI
8CR1 [VI30LA10A]
3K2
120 VAC RMS 50/60 HZ
TO 105/125 VAC RMS 5 AMP 50/60 HZ POWER SUPPLY
CHARGE COMPLETE ADJUSTMENT SEE ADJUSTMENT PROCEDURE 2 AT 2,C
METER CALIBRATION ADJUSTMENT SEE ADJUSTMENT PROCEDURE 1 AT 2,B
OVERCHARGE CONNECTION NOTE 1
BLACK LEAD
RED DOT
TO ITP2 AND SURGE SUPPRESSOR 13,D
TO 3TBI-19 AND 60 HZ INVERTER 13,C
TO 3J4-17 AND INVERTER DRIVERS 14,C
TO 3J4-11 AND CONTROL CIRCUITS 74,B
TO 3J1-13,J4-15 AND POWER ON LAMP 73,C
TO 2TBI-2 AT 53,D
TO 8F2 32,C 94,D
TO 8F1 32,F 94,F
TO 2TBI-3 OF 500 HZ INVERTER AT 35,F AND IC3 AT(73,E)K13,F)X36,F)
TO 4A1-1 AND READY LIGHT AT 82,D
TO 3TBI-5 AND 60 HZ INVERTER AT 15,G
TO 4A1-11 AND UNIT ON LIGHT AT 73,F
TO 3TBI-11 AND MA OVERLOAD CIRCUIT 72,F
TO 3J4-5 AND CONTROL CIRCUITS AT(83,G)
BATTERY CHARGER

ORAWING NO. CONT ON SHEET - SHT NO. 1

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:-
APPLIED PRACTICES
REV A B
CONT ON SHEET - SHT NO. 1

GENERAL ELECTRIC
30466-D20
CONT ON SHEET - SHT NO 1
TITLE
SCHEMATIC DIAGRAM
METER BOARD
FIRST MADE FOR AMX GENERATOR

46-188494G1-A
4A2

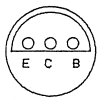


BATTERY CONDITION METER

NOTES

UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS ARE 1/4W, 5%
AND ARE IN OHMS.

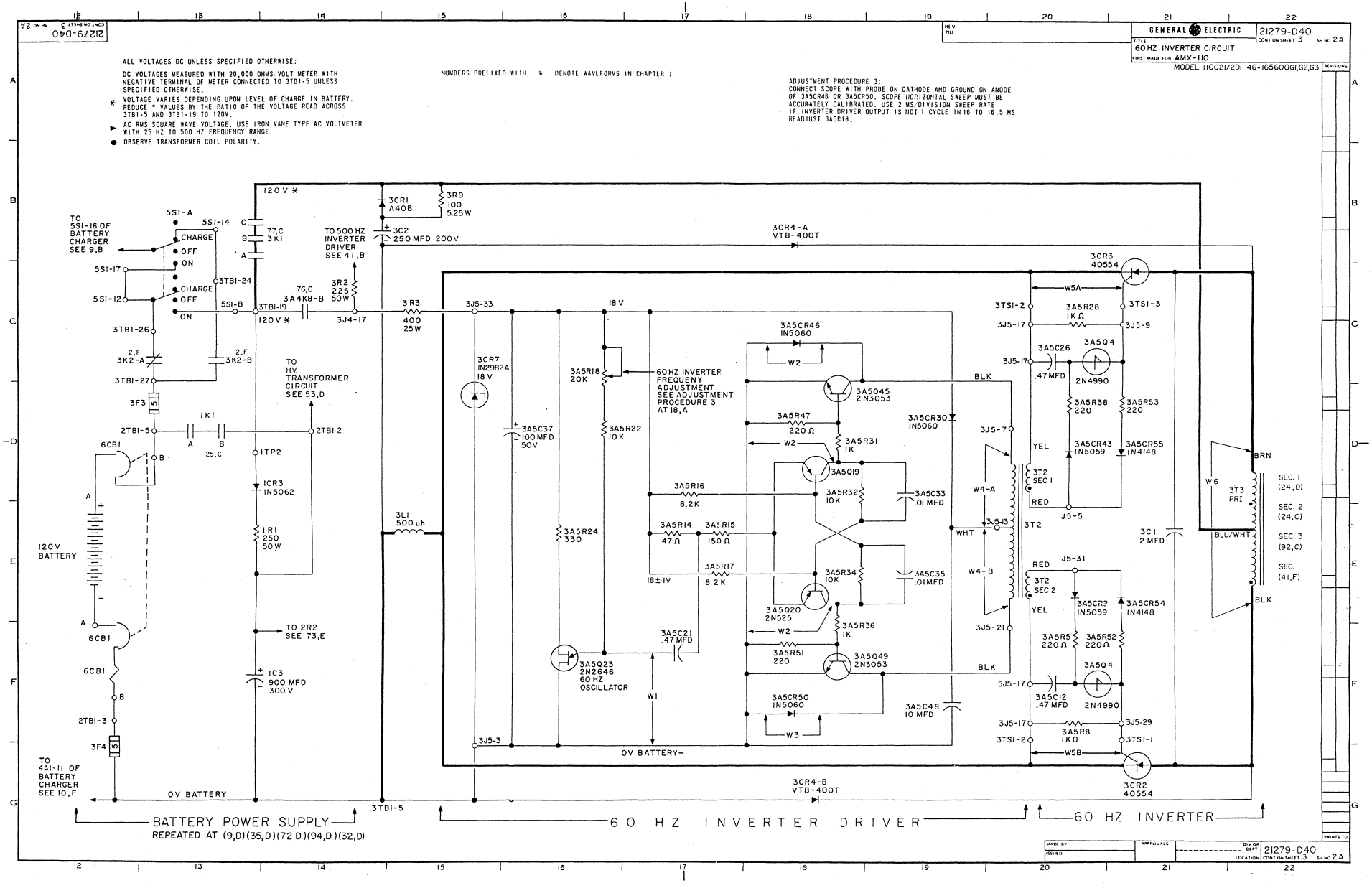
ALL DEVICES SHOWN TOP VIEW

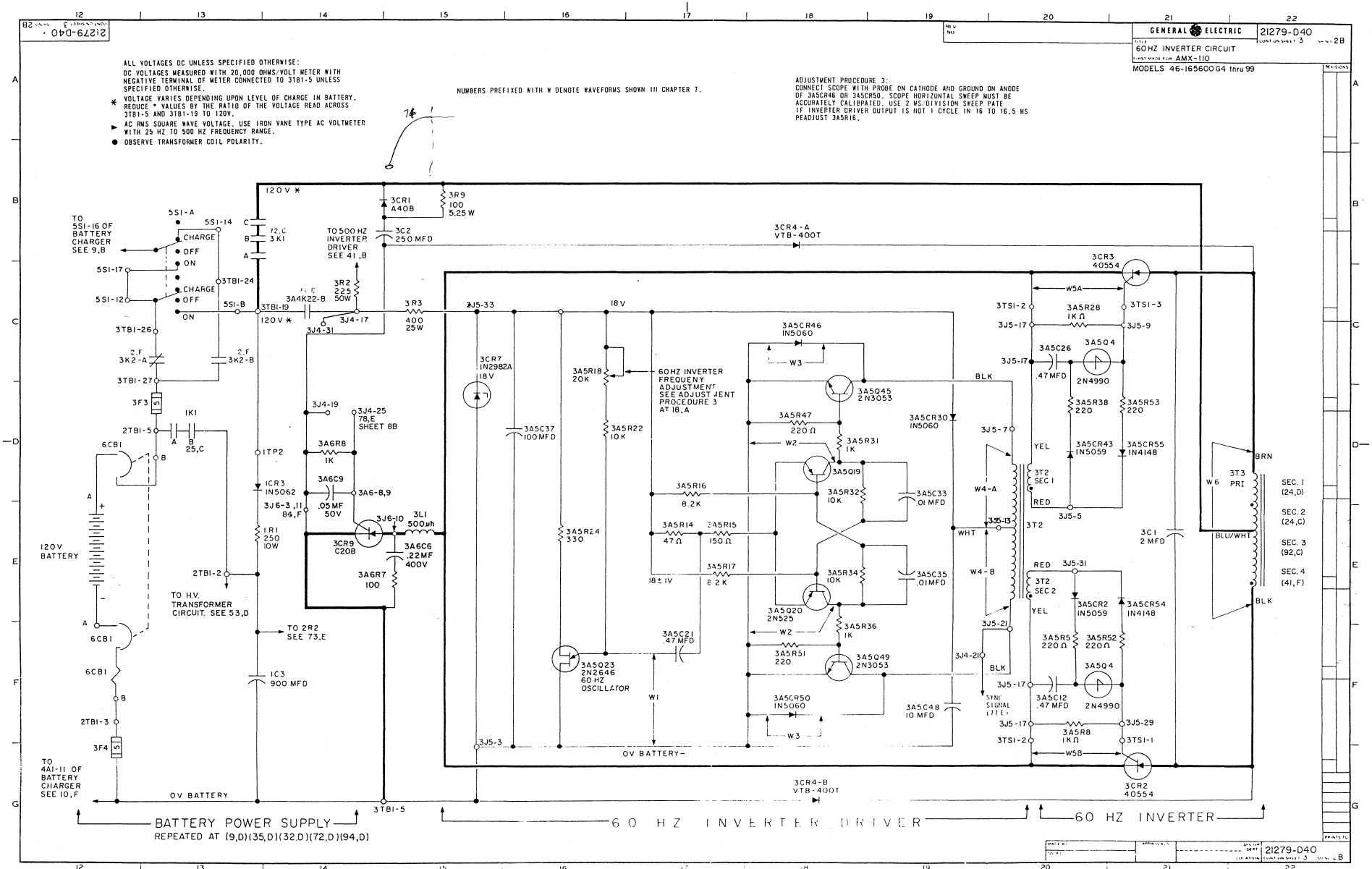


2N3417

REVISIONS	PRINTS TO
B DUS 9/MAY/79	407
GENERAL CHANGES	

MADE BY Gary Dus 6 June 79
ISSUED
APPROVALS
MEDICAL SYSTEMS DIV OR DEPT
MILWAUKEE, WI LOCATION
CONT ON SHEET - SHT NO. 1


GENERAL ELECTRIC
21279-D40
60HZ INVERTER CIRCUIT
FIRST MADE FOR AMX-110
MODEL 11CC21/201 46-165600G1,G2,G3
ALL VOLTAGES DC UNLESS SPECIFIED OTHERWISE:
DC VOLTAGES MEASURED WITH 20,000 OHMS/VOLT METER WITH NEGATIVE TERMINAL OF METER CONNECTED TO 3TB1-5 UNLESS SPECIFIED OTHERWISE.
* VOLTAGE VARIES DEPENDING UPON LEVEL OF CHARGE IN BATTERY. REDUCE * VALUES BY THE RATIO OF THE VOLTAGE READ ACROSS 3TB1-5 AND 3TB1-19 TO 120V.
► AC RMS SQUARE WAVE VOLTAGE. USE IRON VANE TYPE AC VOLTMETER WITH 25 HZ TO 500 HZ FREQUENCY RANGE.
● OBSERVE TRANSFORMER COIL POLARITY.
NUMBERS PREFIXED WITH % DENOTE WAVEFORMS IN CHAPTER 7
ADJUSTMENT PROCEDURE 3:
CONNECT SCOPE WITH PROBE ON CATHODE AND GROUND ON ANODE OF 3A5CR46 OR 3A5CR50. SCOPE HORIZONTAL SWEEP MUST BE ACCURATELY CALIBRATED. USE 2 MS/DIVISION SWEEP RATE
IF INVERTER DRIVER OUTPUT IS NOT 1 CYCLE IN 16 TO 16.5 MS READJUST 3A5R18.
120V BATTERY
TO 5SI-16 OF BATTERY CHARGER SEE 9,B
5SI-A
5SI-14
CHARGE
OFF
ON
5SI-17
5SI-12
5SI-B
3TBI-24
3TBI-19
3TBI-26
3TBI-27
3TBI-5
3TBI-3
2TBI-5
2TBI-2
1TP2
3F3
3F4
1K1
25,C
77,C 3K1
76,C 3A4K8-B
2,F 3K2-A
2,F 3K2-B
6CB1
1R1 250 50W
1C3 900 MFD 300 V
TO 2R2 SEE 73,E
TO HV TRANSFORMER CIRCUIT SEE 53,D
TO 4A1-11 OF BATTERY CHARGER SEE 10,F
0V BATTERY
120V *
3CR1 A40B
3R9 100 5.25W
3C2 250 MFD 200V
TO 500 HZ INVERTER DRIVER SEE 41,B
3R2 225 50W
3J4-17
3R3 400 25W
3J5-33
3L1 500 uh
3J5-3
3CR4-A VTB-400T
3CR4-B VTB-400T
3CR7 IN2982A 18V
18V
3A5CR46 IN5060
3A5R18 20K
60HZ INVERTER FREQUENY ADJUSTMENT SEE ADJUSTMENT PROCEDURE 3 AT 18,A
3A5R22 10K
3A5C37 100 MFD 50V
3A5R24 330
3A5R16 8.2K
3A5R14 47Ω
3A5R15 150Ω
3A5R17 8.2K
18±1V
3A5Q23 2N2646 60 HZ OSCILLATOR
3A5C21 .47 MFD
W1
3A5Q45 2N3053
3A5R47 220Ω
3A5R31 1K
3A5Q19
3A5R32 10K
3A5C33 .01 MFD
3A5Q20 2N525
3A5R34 10K
3A5C35 .01 MFD
3A5R36 1K
3A5R51 220
3A5Q49 2N3053
3A5CR50 IN5060
3A5C48 10 MFD
W2
W3
BLK
3A5CR30 IN5060
3J5-7
3J5-13
3J5-21
WHT
W4-A
W4-B
3T2 SEC 1
3T2 SEC 2
RED
YEL
J5-5
J5-31
3CR3 40554
W5A
3TSI-2
3TSI-3
3J5-17
3J5-9
3A5R28 1KΩ
3A5C26 .47 MFD
3A5Q4 2N4990
3A5R38 220
3A5R53 220
3A5CR43 IN5059
3A5CR55 IN4148
3A5CR? IN5059
3A5CR54 IN4148
3A5R5 220Ω
3A5R52 220Ω
3A5C12 .47 MFD
3J5-29
3A5R8 1KΩ
W5B
3CR2 40554
3T3 PRI
W6
BRN
BLU/WHT
SEC. 1 (24,D)
SEC. 2 (24,C)
SEC. 3 (92,C)
SEC. (41,F)
3C1 2 MFD
0V BATTERY-
BATTERY POWER SUPPLY
REPEATED AT (9,D)(35,D)(72,D)(94,D)(32,D)
60 HZ INVERTER DRIVER
60 HZ INVERTER


GENERAL ELECTRIC
21279-040
60 HZ INVERTER CIRCUIT
FIRST MADE FOR AMX-110
MODELS 46-165600 G4 thru 99
ALL VOLTAGES DC UNLESS SPECIFIED OTHERWISE:
DC VOLTAGES MEASURED WITH 20,000 OHMS/VOLT METER WITH NEGATIVE TERMINAL OF METER CONNECTED TO 3TB1-5 UNLESS SPECIFIED OTHERWISE.
* VOLTAGE VARIES DEPENDING UPON LEVEL OF CHARGE IN BATTERY. REDUCE * VALUES BY THE RATIO OF THE VOLTAGE READ ACROSS 3TB1-5 AND 3TB1-19 TO 120V.
► AC RMS SQUARE WAVE VOLTAGE. USE IRON VANE TYPE AC VOLTMETER WITH 25 HZ TO 500 HZ FREQUENCY RANGE.
● OBSERVE TRANSFORMER COIL POLARITY.
NUMBERS PREFIXED WITH W DENOTE WAVEFORMS SHOWN III CHAPTER 7.
ADJUSTMENT PROCEDURE 3:
CONNECT SCOPE WITH PROBE ON CATHODE AND GROUND ON ANODE OF 3A5CR46 OR 3A5CR50. SCOPE HORIZUNTAL SWEEP MUST BE ACCURATELY CALIBRATED. USE 2 MS/DIVISION SWEEP RATE IF INVERTER DRIVER OUTPUT IS NOT 1 CYCLE IN 16 TO 16.5 MS PEADJUST 3A5R16.
120V BATTERY
TO 5SI-16 OF BATTERY CHARGER SEE 9,B
5SI-A
5SI-14
CHARGE
OFF
ON
5SI-17
5SI-12
5SI-B
3TBI-24
3TBI-19
3TBI-26
3TBI-27
3K2-A
3K2-B
3F3
1KI
2TBI-5
6CBI
2TBI-2
2TBI-3
3F4
TO 4AI-11 OF BATTERY CHARGER SEE 10,F
OV BATTERY
120V *
3CR1 440B
3R9 100 5.25 W
3C2 250 MFD
TO 500 HZ INVERTER DRIVER SEE 41,B
3R2 225 50W
3A4K22-B
3J4-17
3J4-31
3R3 400 25W
3J5-33
3J4-19
3J4-25 78,E SHEET 8B
3A6R8 1K
3A6C9 .05MF 50V
3A6-8,9
3J6-3,11 84,F
3J6-10
3L1 500μh
3CR9 C20B
3A6C6 .22MF 400V
3A6R7 100
1CR3 IN5062
1R1 250 10W
1TP2
TO H.V. TRANSFORMER CIRCUIT. SEE 53,D
TO 2R2 SEE 73,E
1C3 900 MFD
3TBI-5
3CR4-A VTB-400T
3CR4-B VTB-400T
3CR7 IN2982A 18V
3A5C37 100 MFD
18V
3A5R18 20K
3A5R22 10K
3A5R24 330
60HZ INVERTER FREQUENY ADJUSTMENT SEE ADJUSTMENT PROCEDURE 3 AT 18,A
3A5R16 8.2K
3A5R14 47Ω
3A5R15 150Ω
3A5R17 8.2K
18±1V
3A5C21 .47 MFD
3A5Q23 2N2646 60 HZ OSCILLATOR
W1
3A5CR46 IN5060
W3
3A5Q45 2N3053
3A5R47 220Ω
W2
3A5R31 1K
3A5Q19
3A5R32 10K
3A5C33 .01 MFD
3A5R34 10K
3A5C35 .01MFD
3A5Q20 2N525
3A5R36 1K
3A5R51 220
3A5Q49 2N3053
3A5CR50 IN5060
3A5C48 10 MFD
3A5R28 1KΩ
3A5C26 .47MFD
3A5Q4 2N4990
3A5R38 220
3A5R53 220
3A5CR43 IN5059
3A5CR55 IN4148
3A5CR30 IN5060
3A5CR2 IN5059
3A5CR54 IN4148
3A5R5 220Ω
3A5R52 220Ω
3A5C12 .47 MFD
3A5R8 1KΩ
3CR3 40554
3CR2 40554
W5A
W5B
W4-A
W4-B
3T2 SEC 1
3T2 SEC 2
3T2
3T3 PRI
3C1 2 MFD
SEC. 1 (24,D)
SEC. 2 (24,C)
SEC. 3 (92,C)
SEC. 4 (41,F)
BRN
BLU/WHT
YEL
RED
WHT
BLK
SYNC SIGNAL (7T,E)
BATTERY POWER SUPPLY
REPEATED AT (9,D)(35,D)(32,D)(72,D)(94,D)
60 HZ INVERTER DRIVER
60 HZ INVERTER

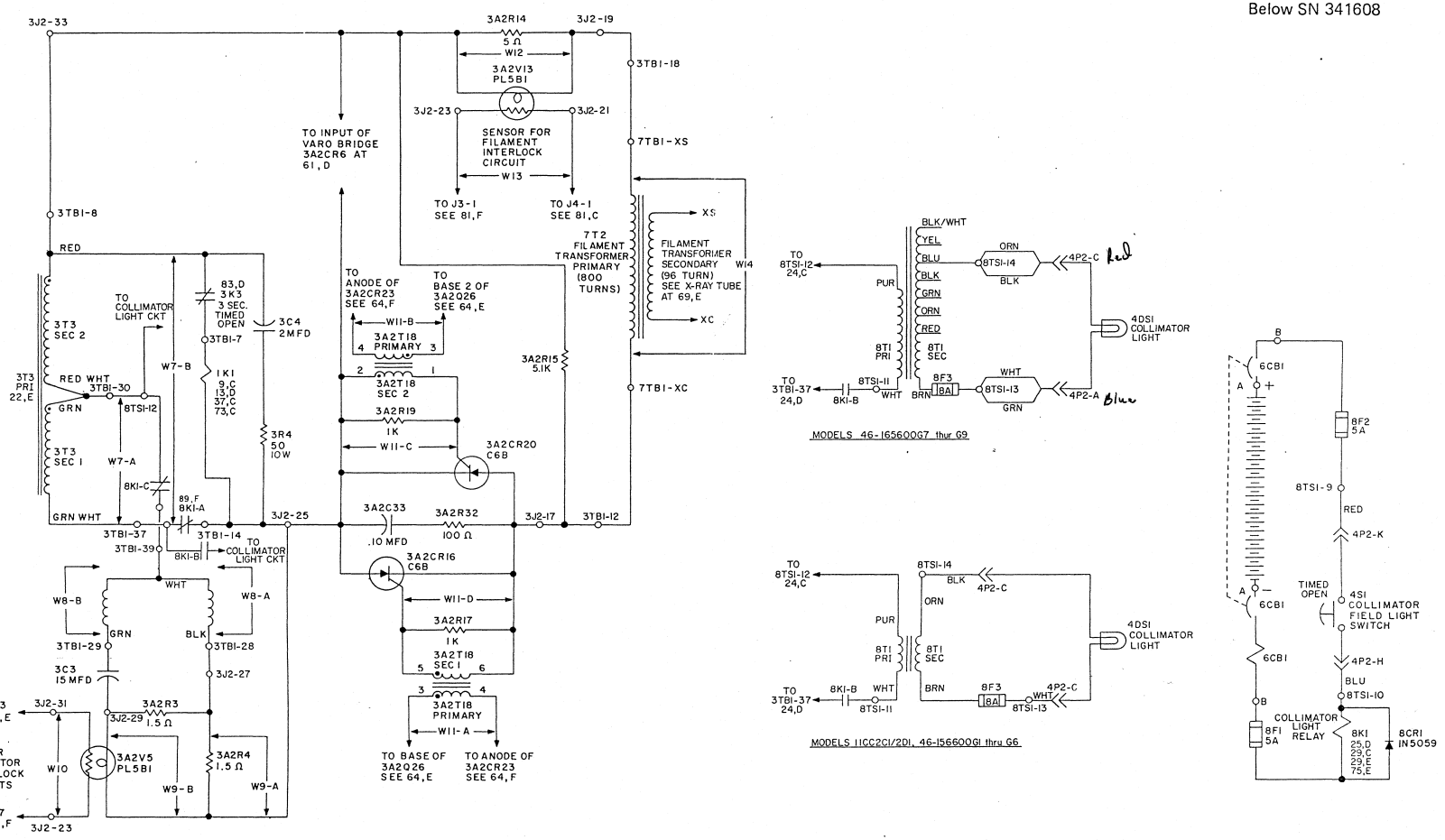
GENERAL ELECTRIC | 21279-D40 | CONT ON SHEET 4 | SH NO 3A

TITLE: TUBE STATOR AND FILAMENT POWER, COLL. LIGHT

FIRST MADE FOR AMX-110 ALL MODELS

Below SN 341608

REVISIONS

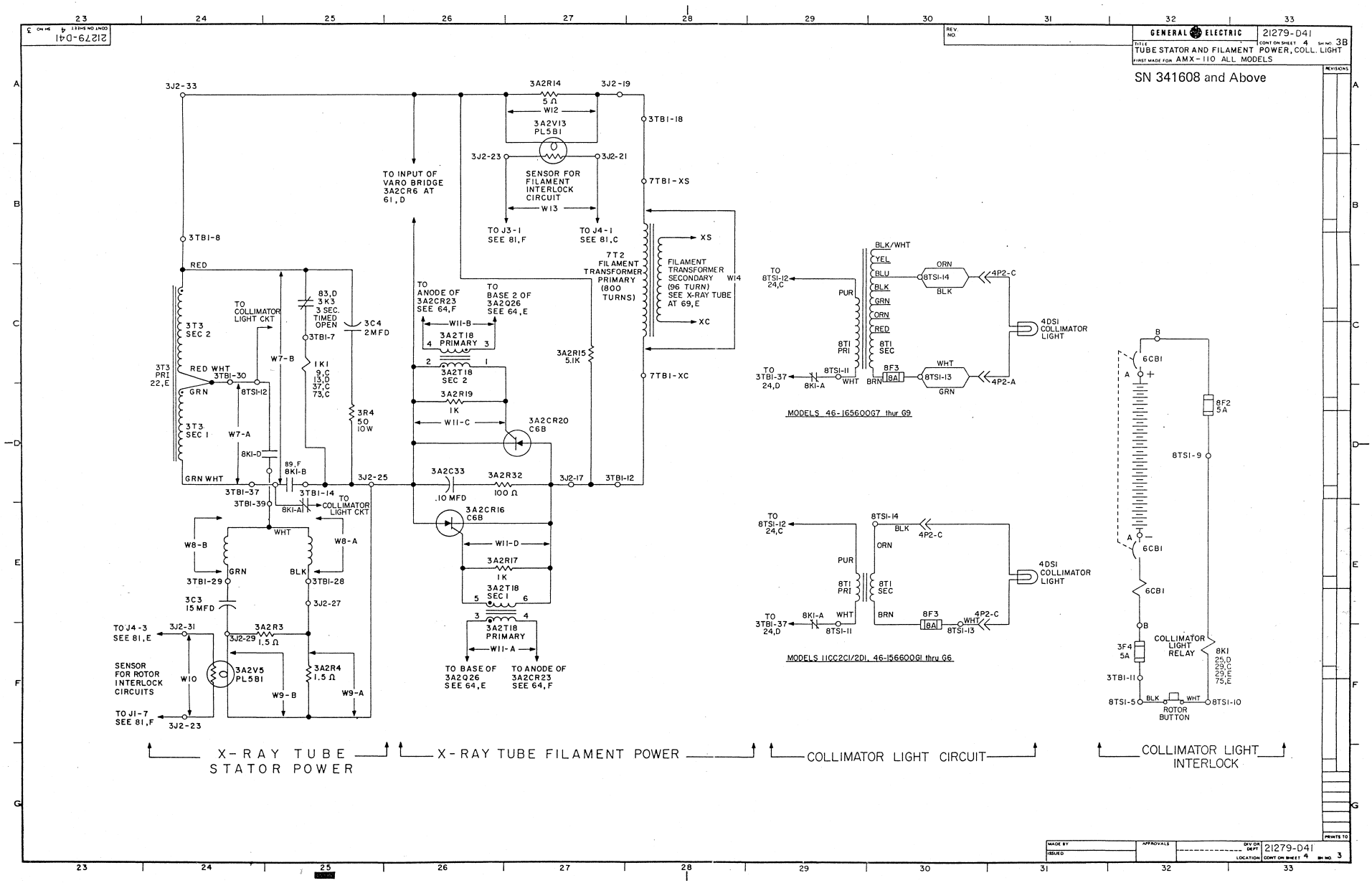


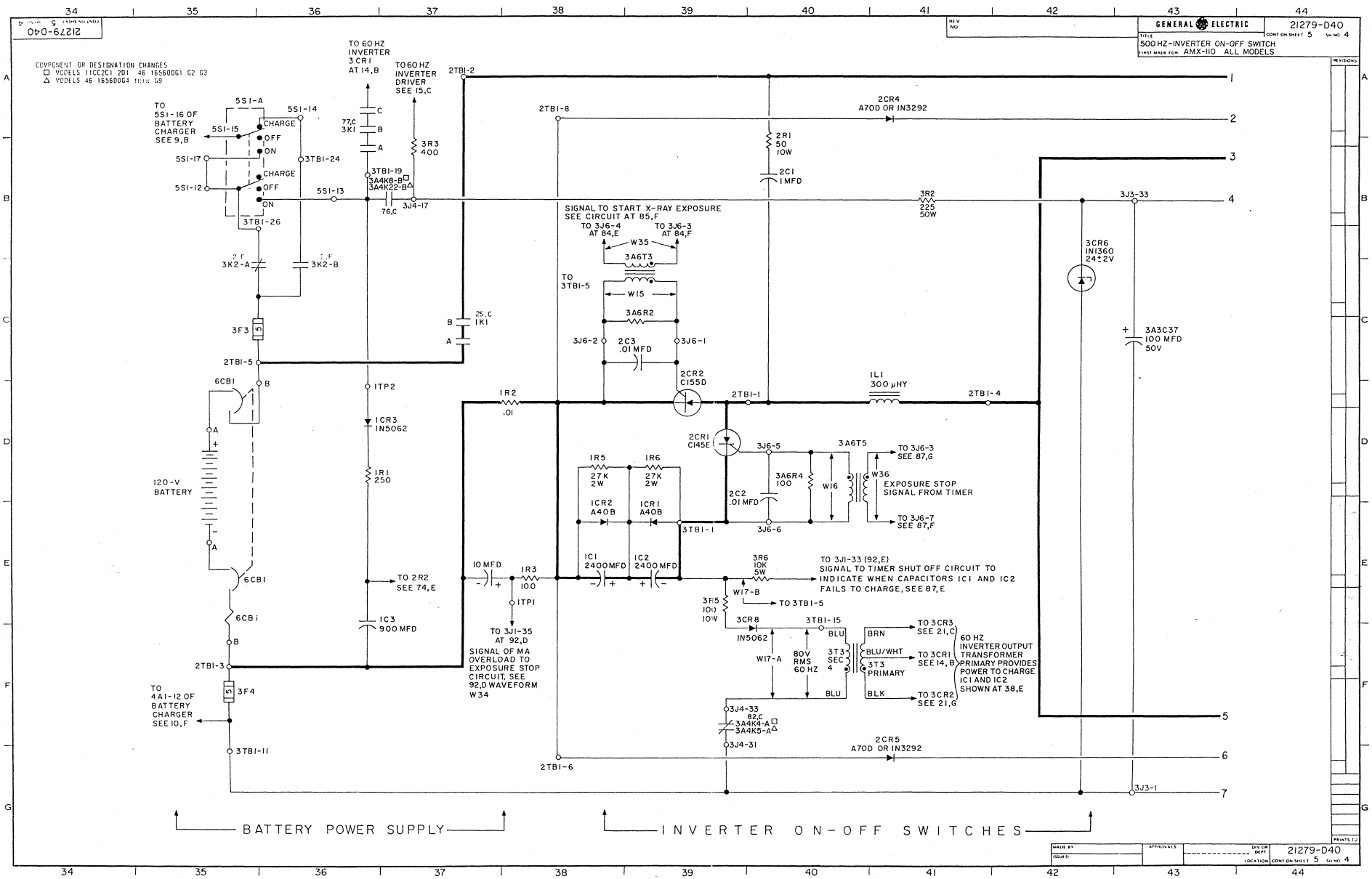
X-RAY TUBE STATOR POWER | X-RAY TUBE FILAMENT POWER | COLLIMATOR LIGHT CIRCUIT | COLLIMATOR LIGHT INTERLOCK

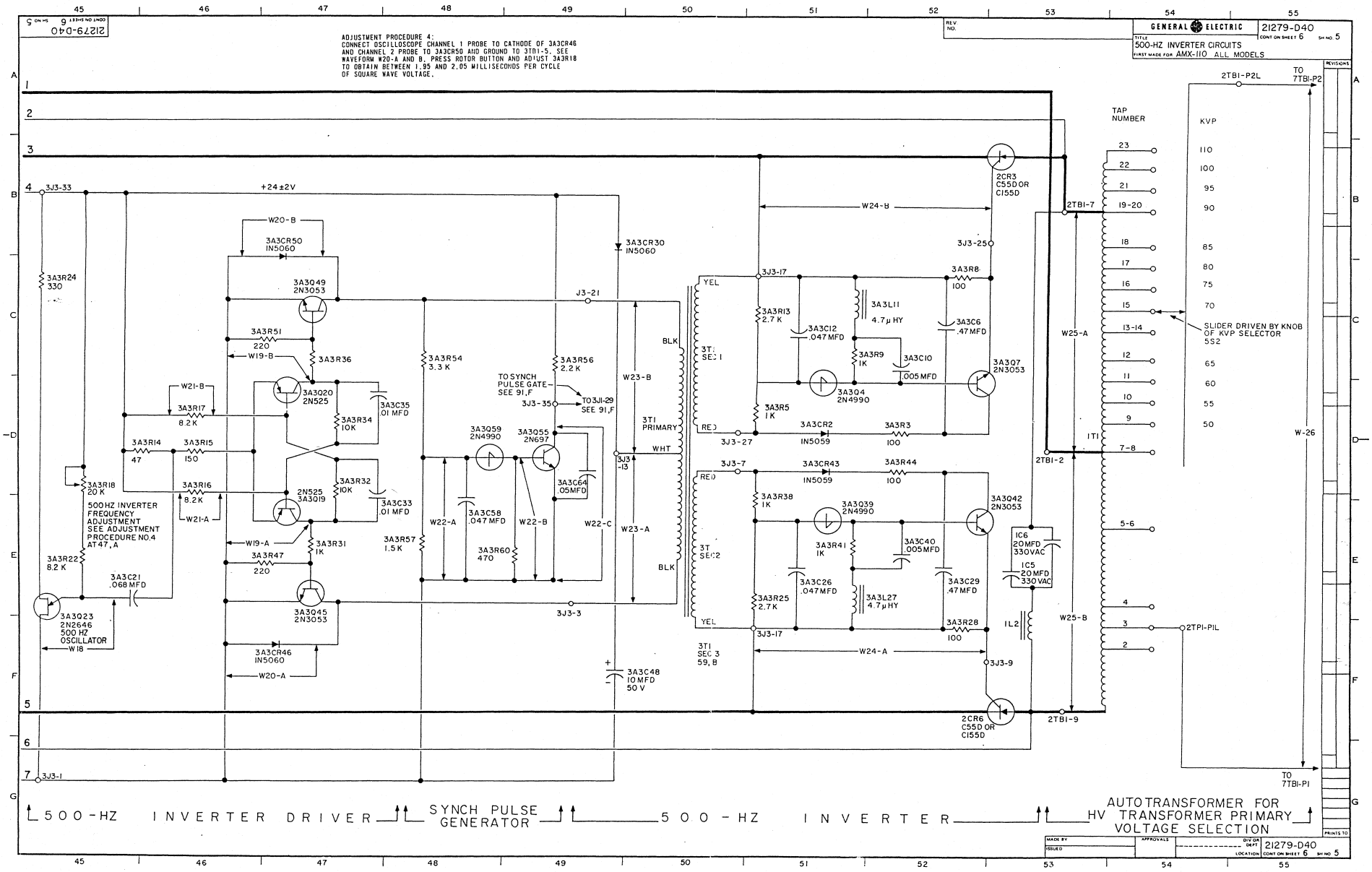
MADE BY | APPROVALS | DIV OR DEPT | 21279-D40

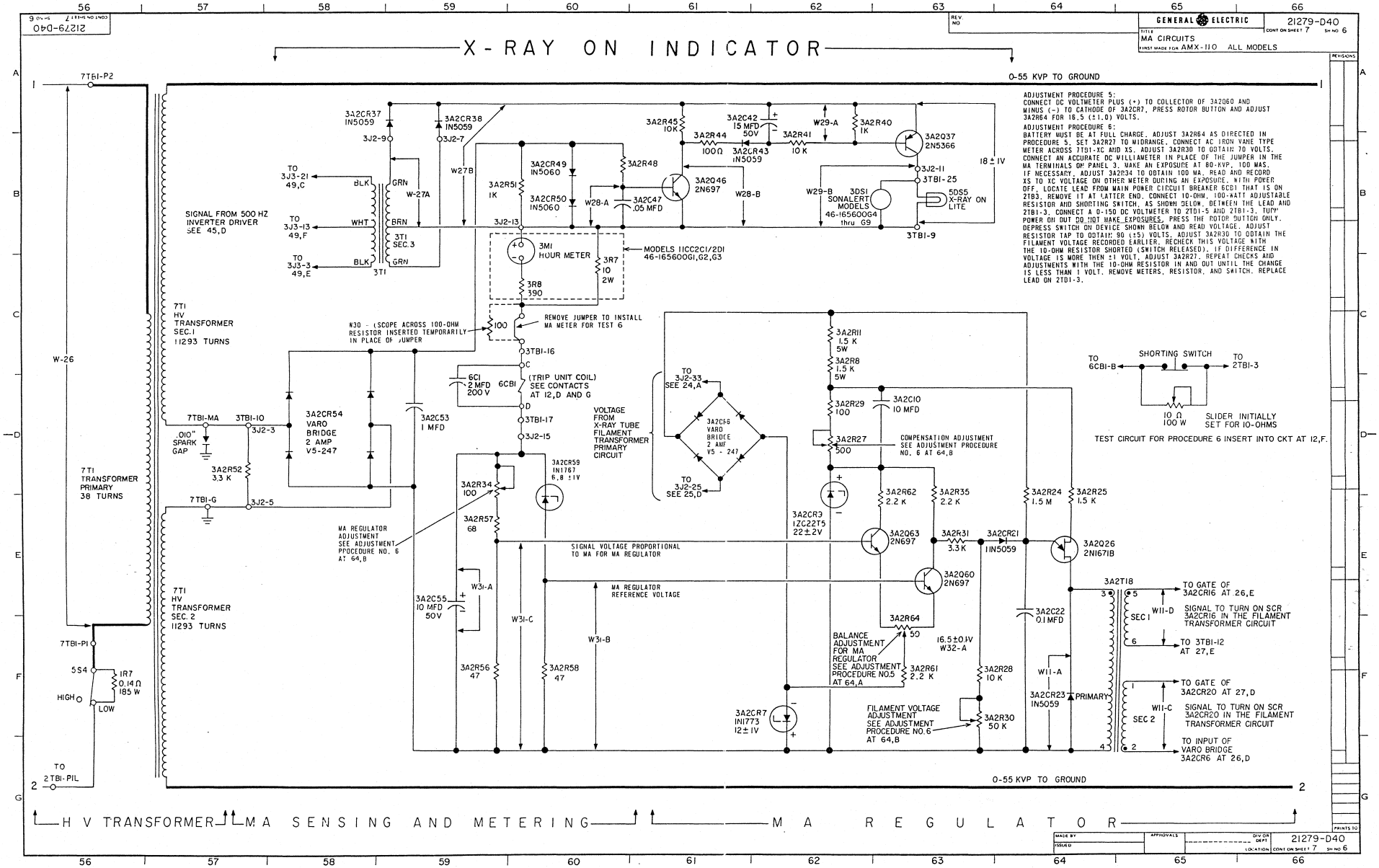
ISSUED | LOCATION | CONT ON SHEET 4 | SH NO 3

PRINTS TO


GENERAL ELECTRIC
21279-D41
TUBE STATOR AND FILAMENT POWER, COLL. LIGHT
FIRST MADE FOR AMX-110 ALL MODELS
SN 341608 and Above
3J2-33
3A2R14
5Ω
W12
3J2-19
3TBI-18
3A2V13
PL5BI
3J2-23
3J2-21
SENSOR FOR FILAMENT INTERLOCK CIRCUIT
W13
7TBI-XS
TO INPUT OF VARO BRIDGE 3A2CR6 AT 61,D
TO J3-1 SEE 81,F
TO J4-1 SEE 81,C
3TBI-8
RED
7T2 FILAMENT TRANSFORMER PRIMARY (800 TURNS)
XS
FILAMENT TRANSFORMER SECONDARY (96 TURN) SEE X-RAY TUBE AT 69,E
W14
XC
7TBI-XC
TO COLLIMATOR LIGHT CKT
83,D 3K3 3 SEC. TIMED OPEN
3C4 2MFD
3TBI-7
3T3 SEC 2
1K1 9,C 13,D 37,C 73,C
W7-B
3T3 PRI 22,E
RED WHT
3TBI-30
GRN
8TSI-12
3T3 SEC 1
W7-A
3R4 50 10W
8KI-D
89,F 8KI-B
GRN WHT
3TBI-37
3TBI-14
3TBI-39
8KI-A1
TO COLLIMATOR LIGHT CKT
3J2-25
TO ANODE OF 3A2CR23 SEE 64,F
TO BASE 2 OF 3A2Q26 SEE 64,E
W11-B
3A2T18 PRIMARY
3A2T18 SEC 2
3A2R19
1K
W11-C
3A2CR20 C6B
3A2R15 5.1K
3A2C33
.10 MFD
3A2R32
100Ω
3J2-17
3TBI-12
3A2CR16 C6B
W11-D
3A2R17
1K
3A2T18 SEC 1
3A2T18 PRIMARY
W11-A
TO BASE OF 3A2Q26 SEE 64,E
TO ANODE OF 3A2CR23 SEE 64,F
W8-B
W8-A
WHT
GRN
BLK
3TBI-29
3TBI-28
3C3 15 MFD
3J2-27
TO J4-3 SEE 81,E
3J2-31
3A2R3 1.5Ω
3J2-29
SENSOR FOR ROTOR INTERLOCK CIRCUITS
W10
3A2V5 PL5BI
3A2R4 1.5Ω
W9-B
W9-A
TO J1-7 SEE 81,F
3J2-23
BLK/WHT
YEL
BLU
BLK
GRN
ORN
RED
TO 8TSI-12 24,C
PUR
8TI PRI
8TI SEC
ORN
8TSI-14
4P2-C
BLK
4DSI COLLIMATOR LIGHT
TO 3TBI-37 24,D
8TSI-11
8KI-A
WHT
BRN
8F3
8A
WHT
8TSI-13
GRN
4P2-A
MODELS 46-165600G7 thur G9
8TSI-14
BLK
4P2-C
ORN
PUR
8TI PRI
8TI SEC
BRN
8F3
8A
WHT
8TSI-13
4P2-C
MODELS 11CC2CI/2DI, 46-156600G1 thru G6
B
6CB1
A
8F2 5A
8TSI-9
6CB1
B
3F4 5A
COLLIMATOR LIGHT RELAY
8KI 25,D 29,C 29,E 75,E
3TBI-11
8TSI-5
BLK
WHT
8TSI-10
ROTOR BUTTON
X-RAY TUBE STATOR POWER
X-RAY TUBE FILAMENT POWER
COLLIMATOR LIGHT CIRCUIT
COLLIMATOR LIGHT INTERLOCK


21279-040
GENERAL ELECTRIC
21279-D40
500 HZ-INVERTER ON-OFF SWITCH
FIRST MADE FOR AMX-110 ALL MODELS
COMPONENT OR DESIGNATION CHANGES
□ MODELS 11CC2C1 2D1 46-165600G1 G2 G3
△ MODELS 46-165600G4 thru G9
TO 60 HZ INVERTER 3 CR1 AT 14,B
TO 60 HZ INVERTER DRIVER SEE 15,C
2TBI-2
2TBI-8
2CR4 A70D OR IN3292
2R1 50 10W
2C1 1MFD
3R3 400
3R2 225 50W
3J3-33
TO 5S1-16 OF BATTERY CHARGER SEE 9,B
5S1-A
5S1-14
5S1-15
CHARGE
OFF
ON
5S1-17
3TBI-24
5S1-12
5S1-13
3TBI-19
3A4K8-B□
3A4K22-B△
3J4-17
76,C
3TBI-26
3K2-A
3K2-B
3F3
2TBI-5
6CB1
B
A
120-V BATTERY
6CB1
6CB1 i
2TBI-3
TO 4A1-12 OF BATTERY CHARGER SEE 10,F
3F4
3TBI-11
ITP2
1CR3 IN5062
1R1 250
TO 2R2 SEE 74,E
1C3 900 MFD
25,C 1K1
SIGNAL TO START X-RAY EXPOSURE SEE CIRCUIT AT 85,F
TO 3J6-4 AT 84,E
TO 3J6-3 AT 84,F
W35
3A6T3
TO 3TBI-5
W15
3A6R2
3J6-2
2C3 .01 MFD
3J6-1
2CR2 C155D
2TBI-1
1R2 .01
1L1 300 μHY
2TBI-4
3CR6 IN1360 24±2V
3A3C37 100 MFD 50V
2CR1 C145E
3J6-5
3A6T5
TO 3J6-3 SEE 87,G
1R5 27K 2W
1R6 27K 2W
3A6R4 100
W16
W36
EXPOSURE STOP SIGNAL FROM TIMER
2C2 .01 MFD
1CR2 A40B
1CR1 A40B
TO 3J6-7 SEE 87,F
3TBI-1
3J6-6
10 MFD
1R3 100
1TP1
TO 3J1-35 AT 92,D
SIGNAL OF MA OVERLOAD TO EXPOSURE STOP CIRCUIT, SEE 92,D WAVEFORM W34
1C1 2400 MFD
1C2 2400 MFD
3R6 10K 5W
TO 3J1-33 (92,E) SIGNAL TO TIMER SHUT OFF CIRCUIT TO INDICATE WHEN CAPACITORS 1C1 AND 1C2 FAILS TO CHARGE, SEE 87,E
W17-B
TO 3TBI-5
3R5 100 10W
3CR8 IN5062
3TBI-15
W17-A
80V RMS 60 HZ
3T3 SEC 4
BLU
BRN
BLU/WHT
3T3 PRIMARY
BLK
TO 3CR3 SEE 21,C
TO 3CR1 SEE 14,B
TO 3CR2 SEE 21,G
60 HZ INVERTER OUTPUT TRANSFORMER PRIMARY PROVIDES POWER TO CHARGE 1C1 AND 1C2 SHOWN AT 38,E
3J4-33
82,C
3A4K4-A□
3A4K5-A△
3J4-31
2CR5 A70D OR IN3292
2TBI-6
3J3-1
BATTERY POWER SUPPLY
INVERTER ON-OFF SWITCHES


ADJUSTMENT PROCEDURE 4:
CONNECT OSCILLOSCOPE CHANNEL 1 PROBE TO CATHODE OF 3A3CR46 AND CHANNEL 2 PROBE TO 3A3CR50 AND GROUND TO 3TB1-5. SEE WAVEFORM #20-A AND B. PRESS ROTOR BUTTON AND ADJUST 3A3R18 TO OBTAIN BETWEEN 1.95 AND 2.05 MILLISECONDS PER CYCLE OF SQUARE WAVE VOLTAGE.
GENERAL ELECTRIC
21279-D40
500-HZ INVERTER CIRCUITS
FIRST MADE FOR AMX-110 ALL MODELS
+24±2V
3J3-33
3A3R24 330
W20-B
3A3CR50 IN5060
3A3Q49 2N3053
3A3R51 220
W19-B
3A3R36
3A3R54 3.3 K
3A3R56 2.2 K
3A3CR30 IN5060
J3-21
W21-B
3A3R17 8.2 K
3A3Q20 2N525
3A3C35 .01 MFD
3A3R34 10K
TO SYNCH PULSE GATE — SEE 91,F
3J3-35
TO 3JI-29 SEE 91,F
3A3R14 47
3A3R15 150
3A3Q59 2N4990
3A3Q55 2N697
3A3C64 .05MFD
3A3R18 20 K
3A3R16 8.2 K
2N525 3A3Q19
3A3R32 10K
3A3C33 .01 MFD
W21-A
500HZ INVERTER FREQUENCY ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO.4 AT 47, A
W19-A
3A3R31 1K
3A3R47 220
3A3R22 8.2 K
3A3C21 .068 MFD
3A3Q23 2N2646 500 HZ OSCILLATOR
W18
3A3Q45 2N3053
3A3CR46 IN5060
W20-A
3A3R57 1.5 K
3A3C58 .047 MFD
3A3R60 470
W22-A
W22-B
W22-C
3J3-3
3A3C48 10 MFD 50 V
W23-B
W23-A
3T1 PRIMARY
BLK
WHT
3J3-13
3T1 SEC 1
3T1 SEC 2
3T1 SEC 3
59, B
YEL
RED
3J3-17
3J3-27
3J3-7
3J3-25
3A3R13 2.7 K
3A3C12 .047 MFD
3A3L11 4.7μ HY
3A3C6 .47 MFD
3A3R8 100
3A3R9 1K
3A3C10 .005 MFD
3A3Q4 2N4990
3A3Q7 2N3053
3A3R5 1K
3A3CR2 IN5059
3A3R3 100
3A3CR43 IN5059
3A3R44 100
3A3R38 1K
3A3Q39 2N4990
3A3Q42 2N3053
3A3R41 1K
3A3C40 .005MFD
3A3C26 .047MFD
3A3C29 .47 MFD
3A3L27 4.7μ HY
3A3R25 2.7K
3A3R28 100
W24-B
W24-A
2CR3 C55D OR C155D
2CR6 C55D OR C155D
1C6 20MFD 330VAC
1C5 20MFD 330VAC
1L2
W25-A
W25-B
W-26
2TB1-7
2TB1-2
2TB1-9
1T1
TAP NUMBER
KVP
23
22
21
19-20
18
17
16
15
13-14
12
11
10
9
7-8
5-6
4
3
2
110
100
95
90
85
80
75
70
65
60
55
50
SLIDER DRIVEN BY KNOB OF KVP SELECTOR 5S2
2TB1-P2L
TO 7TB1-P2
2TP1-P1L
TO 7TB1-P1
7
3J3-1
500-HZ INVERTER DRIVER
SYNCH PULSE GENERATOR
500-HZ INVERTER
AUTOTRANSFORMER FOR HV TRANSFORMER PRIMARY VOLTAGE SELECTION


X-RAY ON INDICATOR
GENERAL ELECTRIC
21279-D40
MA CIRCUITS
FIRST MADE FOR AMX-110 ALL MODELS
0-55 KVP TO GROUND
ADJUSTMENT PROCEDURE 5:
CONNECT DC VOLTMETER PLUS (+) TO COLLECTOR OF 3A2Q60 AND MINUS (-) TO CATHODE OF 3A2CR7, PRESS ROTOR BUTTON AND ADJUST 3A2R64 FOR 18.5 (±1.0) VOLTS.
ADJUSTMENT PROCEDURE 6:
BATTERY MUST BE AT FULL CHARGE. ADJUST 3A2R64 AS DIRECTED IN PROCEDURE 5. SET 3A2R27 TO MIDRANGE. CONNECT AC IRON VANE TYPE METER ACROSS 7TB1-XC AND XS. ADJUST 3A2R30 TO OBTAIN 70 VOLTS. CONNECT AN ACCURATE DC MILLIAMETER IN PLACE OF THE JUMPER IN THE MA TERMINALS ON PANEL 3. MAKE AN EXPOSURE AT 80-KVP, 100 MAS. IF NECESSARY, ADJUST 3A2R34 TO OBTAIN 100 MA. READ AND RECORD XS TO XC VOLTAGE ON OTHER METER DURING AN EXPOSURE, WITH POWER OFF, LOCATE LEAD FROM MAIN POWER CIRCUIT BREAKER 6CB1 THAT IS ON 2TB3. REMOVE IT AT LATTER END. CONNECT 10-OHM, 100-WATT ADJUSTABLE RESISTOR AND SHORTING SWITCH, AS SHOWN BELOW, BETWEEN THE LEAD AND 2TB1-3. CONNECT A 0-150 DC VOLTMETER TO 2TD1-5 AND 2TB1-3. TURN POWER ON BUT DO NOT MAKE EXPOSURES. PRESS THE ROTOR BUTTON ONLY. DEPRESS SWITCH ON DEVICE SHOWN BELOW AND READ VOLTAGE. ADJUST RESISTOR TAP TO OBTAIN 90 (±5) VOLTS. ADJUST 3A2R30 TO OBTAIN THE FILAMENT VOLTAGE RECORDED EARLIER. RECHECK THIS VOLTAGE WITH THE 10-OHM RESISTOR SHORTED (SWITCH RELEASED). IF DIFFERENCE IN VOLTAGE IS MORE THEN ±1 VOLT, ADJUST 3A2R27. REPEAT CHECKS AND ADJUSTMENTS WITH THE 10-OHM RESISTOR IN AND OUT UNTIL THE CHANGE IS LESS THAN 1 VOLT. REMOVE METERS, RESISTOR, AND SWITCH. REPLACE LEAD ON 2TD1-3.
7TBI-P2
SIGNAL FROM 500 HZ INVERTER DRIVER SEE 45,D
7TI HV TRANSFORMER SEC.1 11293 TURNS
7TI TRANSFORMER PRIMARY 38 TURNS
7TI HV TRANSFORMER SEC. 2 11293 TURNS
W-26
3A2CR37 IN5059
3A2CR38 IN5059
3J2-9
3J2-7
W27B
W27A
3A2CR49 IN5060
3A2CR50 IN5060
3A2R48
3A2R51 1K
3A2C47 .05 MFD
W28-A
W28-B
3A2R45 10K
3A2R44 100Ω
3A2C42 15 MFD 50V
3A2C43 IN5059
3A2R41 10 K
W29-A
3A2R40 1K
3A2Q37 2N5366
3A2Q46 2N697
W29-B
3DS1 SONALERT MODELS 46-165600G4 thru G9
5DS5 X-RAY ON LITE
3TBI-25
3TBI-9
18 ± 1V
3J2-11
3J2-13
3MI HOUR METER
MODELS 11CC2C1/2D1 46-165600G1,G2,G3
3R7 10 2W
3R8 390
W30 - 'SCOPE ACROSS 100-OHM RESISTOR INSERTED TEMPORARILY IN PLACE OF JUMPER
100
REMOVE JUMPER TO INSTALL MA METER FOR TEST 6
3TBI-16
3TBI-17
3J2-15
6CI 2 MFD 200 V
6CBI (TRIP UNIT COIL) SEE CONTACTS AT 12,D AND G
7TBI-MA
3TBI-10
3J2-3
.010" SPARK GAP
3A2R52 3.3 K
7TBI-G
3J2-5
3A2CR54 VARO BRIDGE 2 AMP V5-247
3A2C53 1 MFD
3A2R34 100
3A2R57 68
3A2CR59 1N1767 6.8 ±1V
MA REGULATOR ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO. 6 AT 64,B
3A2C55 10 MFD 50V
W3I-A
W3I-C
W3I-B
3A2R56 47
3A2R58 47
SIGNAL VOLTAGE PROPORTIONAL TO MA FOR MA REGULATOR
MA REGULATOR REFERENCE VOLTAGE
VOLTAGE FROM X-RAY TUBE FILAMENT TRANSFORMER PRIMARY CIRCUIT
TO 3J2-33 SEE 24,A
TO 3J2-25 SEE 25,D
3A2CR6 VARO BRIDGE 2 AMP V5 - 247
3A2R11 1.5 K 5W
3A2R8 1.5 K 5W
3A2R29 100
3A2C10 10 MFD
3A2R27 500
COMPENSATION ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO. 6 AT 64,B
3A2CR3 1ZC22T5 22±2V
3A2R62 2.2 K
3A2R35 2.2 K
3A2R24 1.5 M
3A2R25 1.5 K
3A2Q63 2N697
3A2R31 3.3 K
3A2CR21 1IN5059
3A2Q26 2N1671B
3A2Q60 2N697
3A2R64 50
BALANCE ADJUSTMENT FOR MA REGULATOR SEE ADJUSTMENT PROCEDURE NO.5 AT 64,A
3A2R61 2.2 K
16.5±0.1V W32-A
3A2C22 0.1 MFD
3A2R28 10 K
3A2R30 50 K
FILAMENT VOLTAGE ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO.6 AT 64,B
3A2CR7 1NI773 12±1V
3A2CR23 1N5059
W11-A
3A2T18
PRIMARY
SEC 1
SEC 2
W11-D
W11-C
TO GATE OF 3A2CR16 AT 26,E
SIGNAL TO TURN ON SCR 3A2CR16 IN THE FILAMENT TRANSFORMER CIRCUIT
TO 3TBI-12 AT 27,E
TO GATE OF 3A2CR20 AT 27,D
SIGNAL TO TURN ON SCR 3A2CR20 IN THE FILAMENT TRANSFORMER CIRCUIT
TO INPUT OF VARO BRIDGE 3A2CR6 AT 26,D
TO 6CBI-B
SHORTING SWITCH
TO 2TBI-3
10 Ω 100 W
SLIDER INITIALLY SET FOR 10-OHMS
TEST CIRCUIT FOR PROCEDURE 6 INSERT INTO CKT AT 12,F.
7TBI-PI
5S4
1R7 0.14 Ω 185 W
HIGH
LOW
TO 2TBI-PIL
0-55 KVP TO GROUND
H V TRANSFORMER
MA SENSING AND METERING
MA REGULATOR

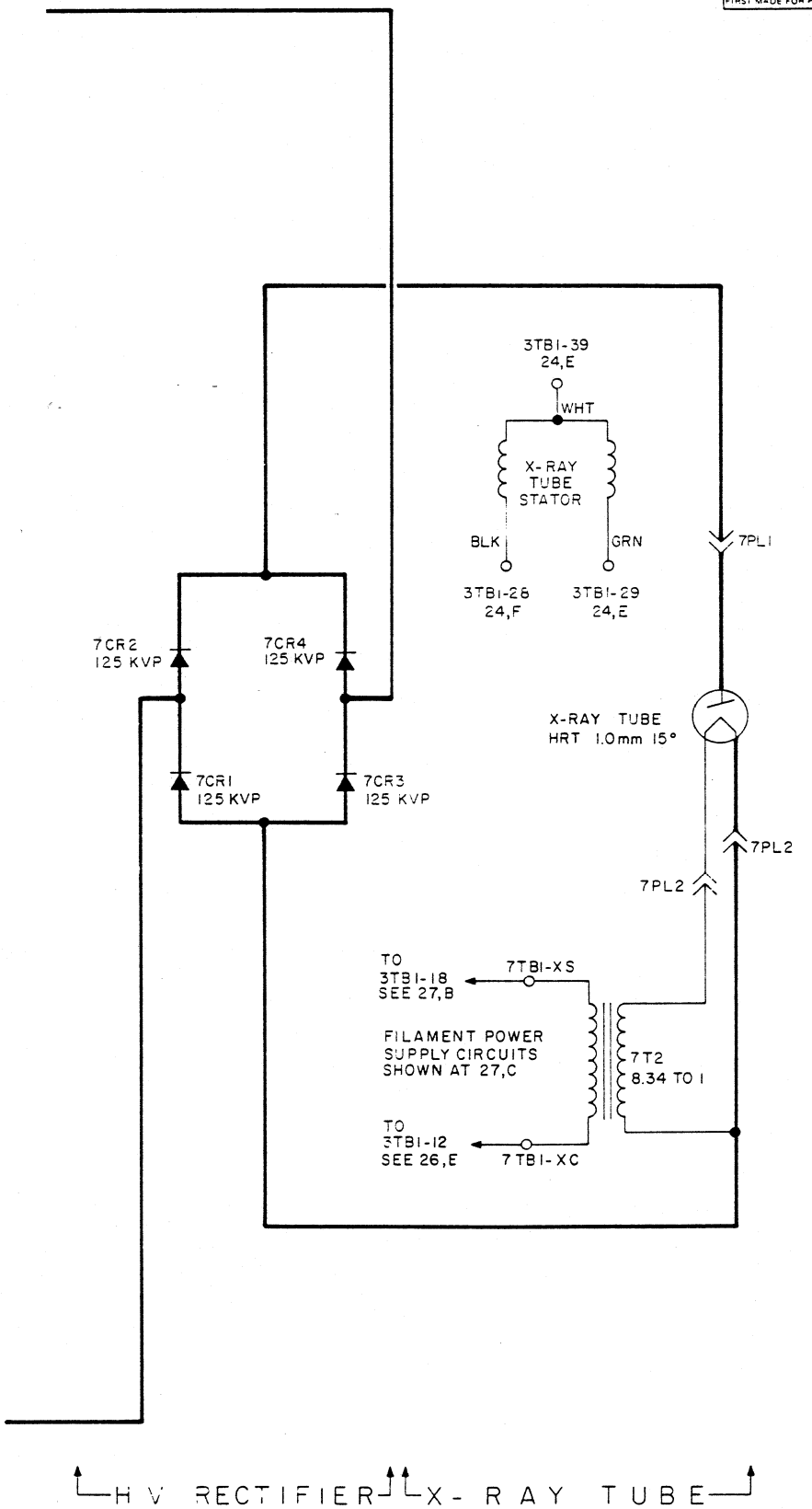
REV NO.

GENERAL ELECTRIC 21279-D40

TITLE HV RECTIFIER AND X-RAY TUBE UNIT CONT ON SHEET 8 SH NO 7

FIRST MADE FOR AMX 110 ALL MODELS

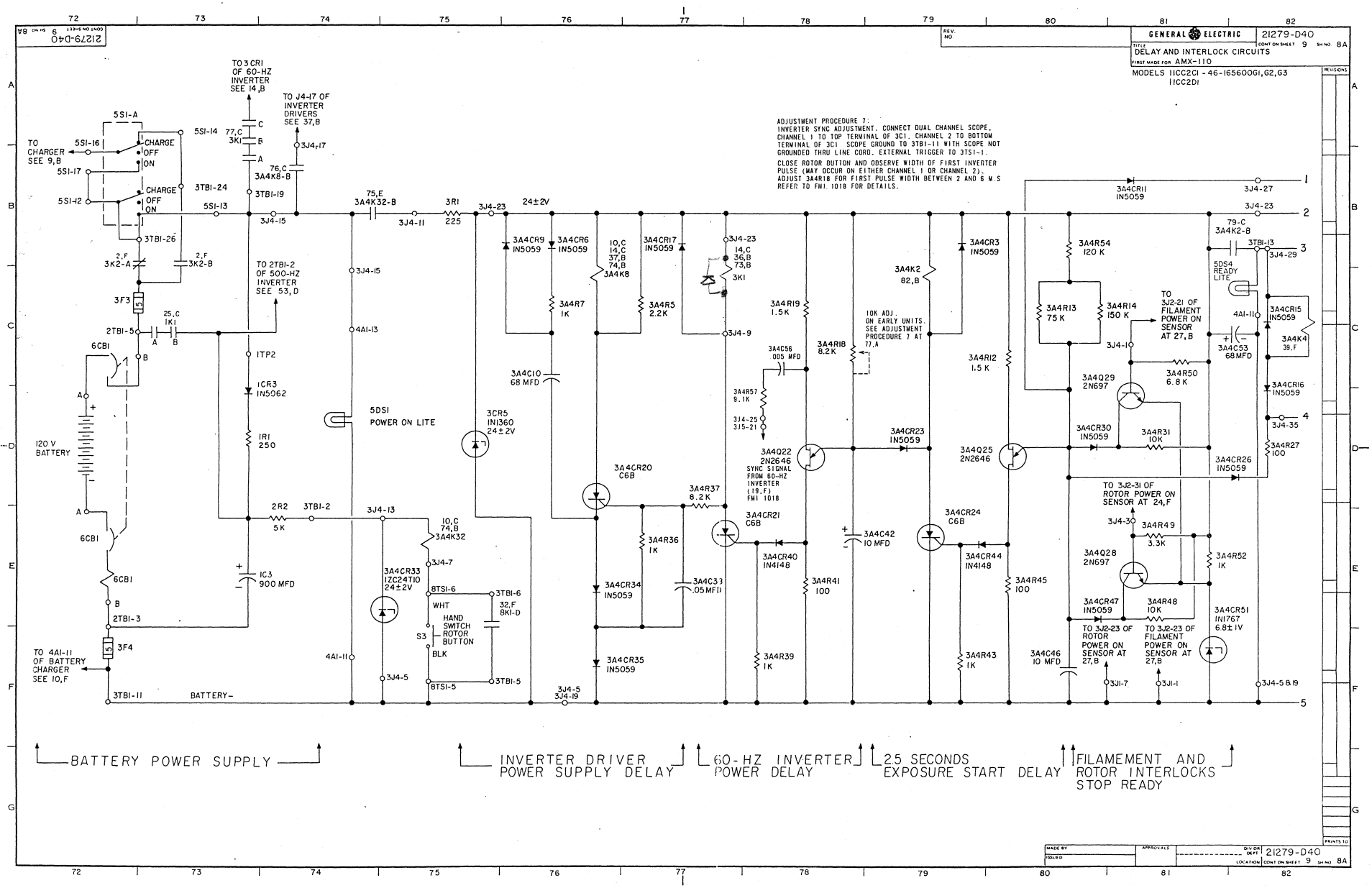
REVISIONS

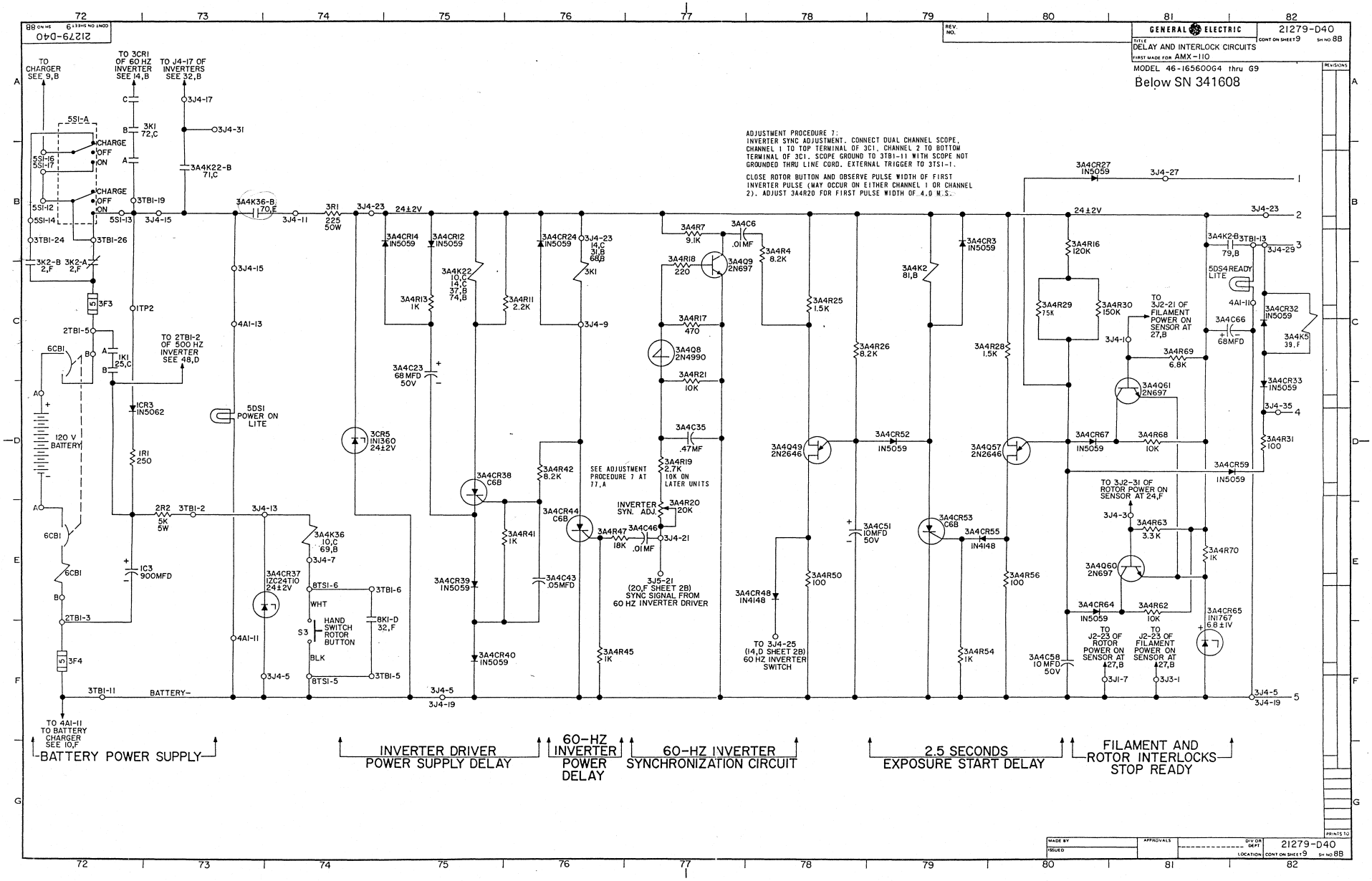


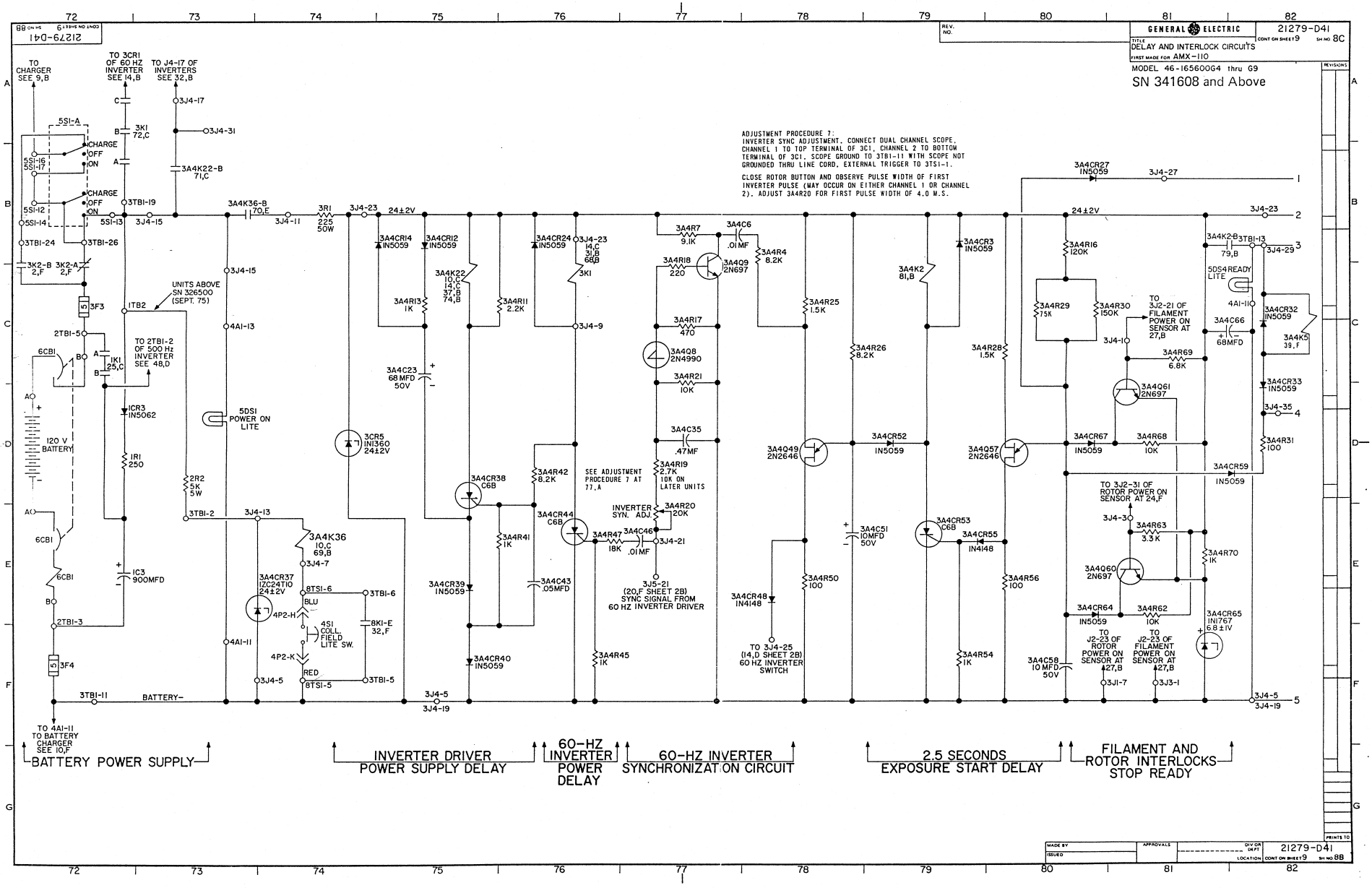
H V RECTIFIER — X-RAY TUBE

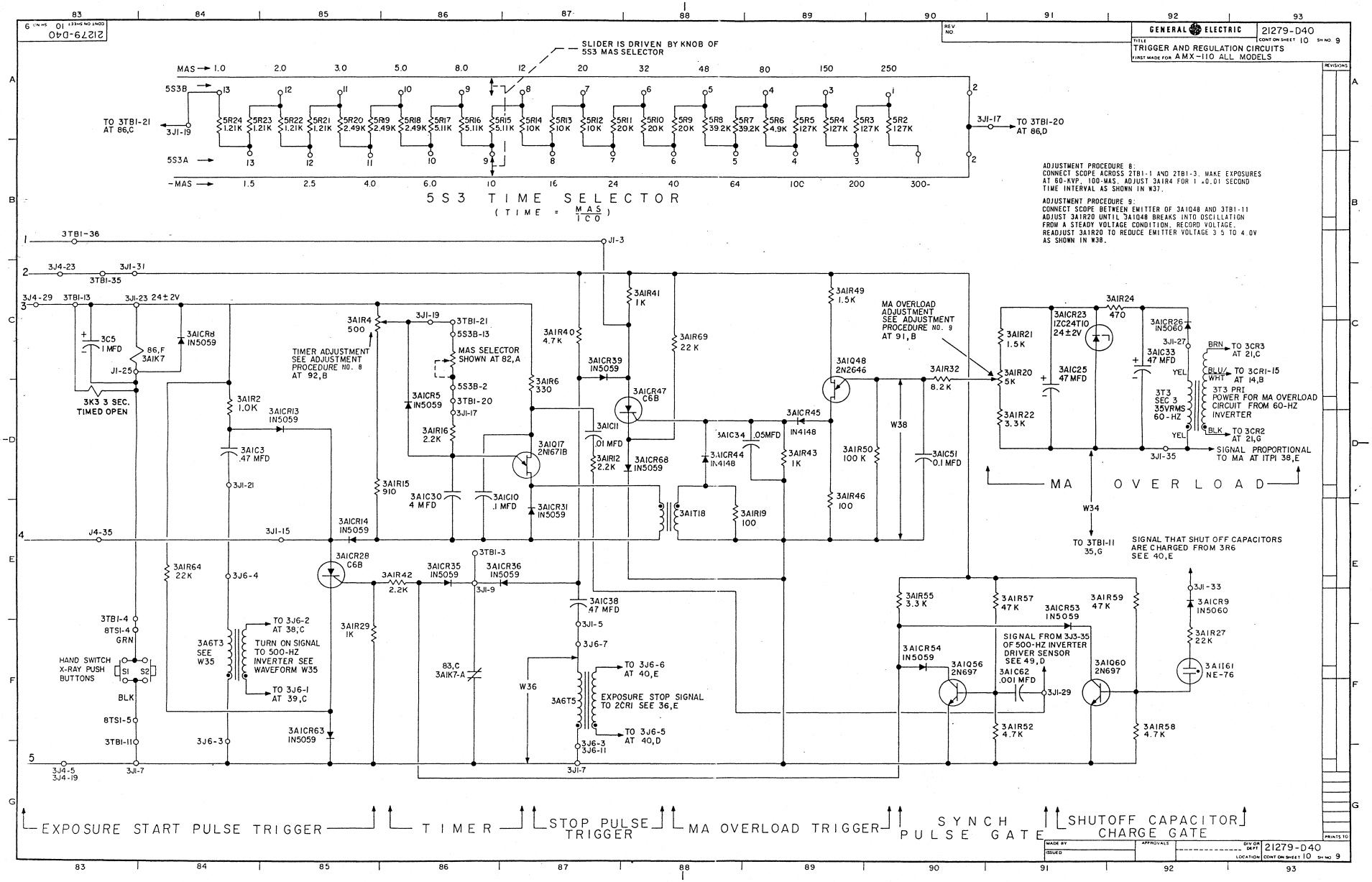
PRINTS TO

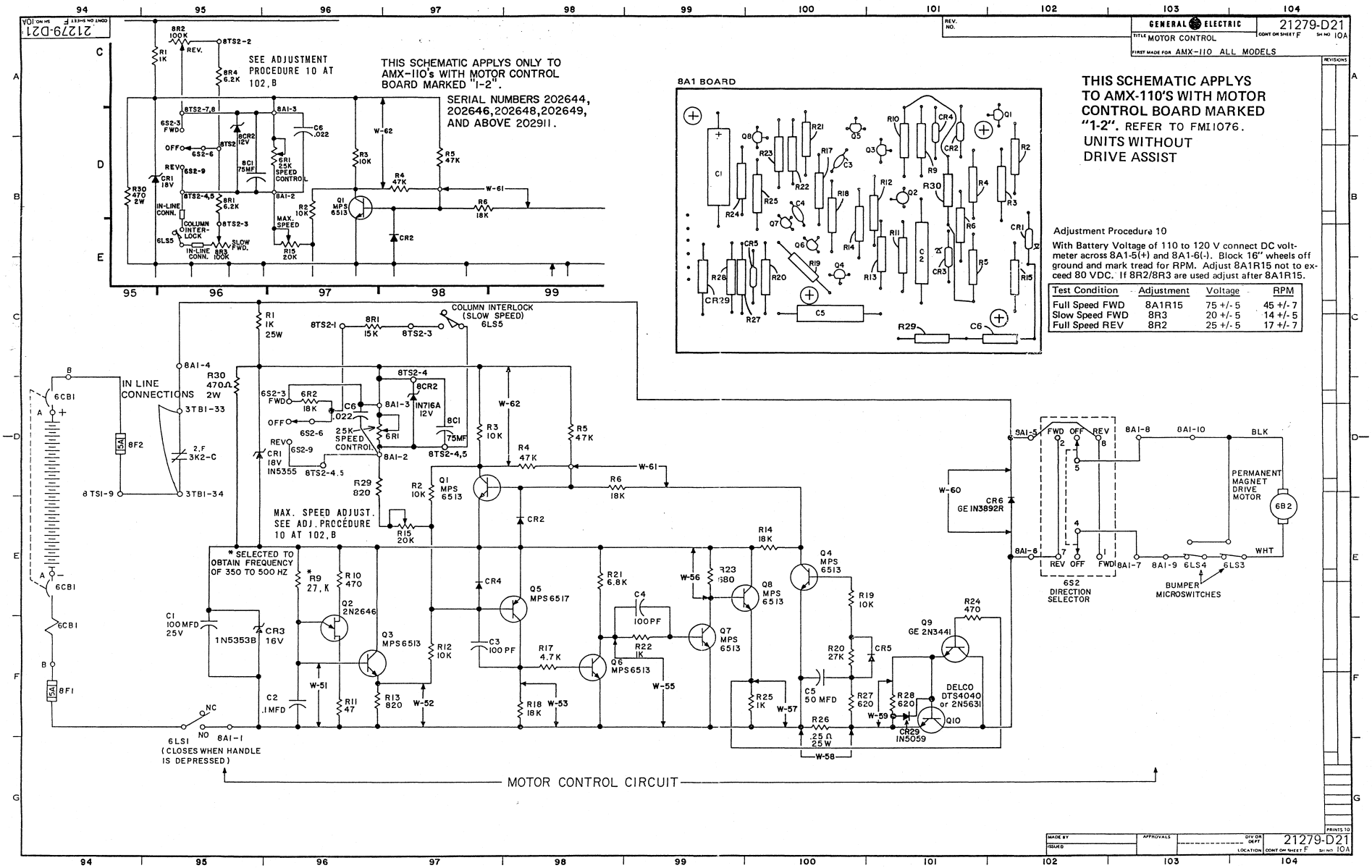
MADE BY / ISSUED | APPROVALS | DIV OR DEPT / LOCATION | 21279-D40 CONT ON SHEET 8 SH NO 7

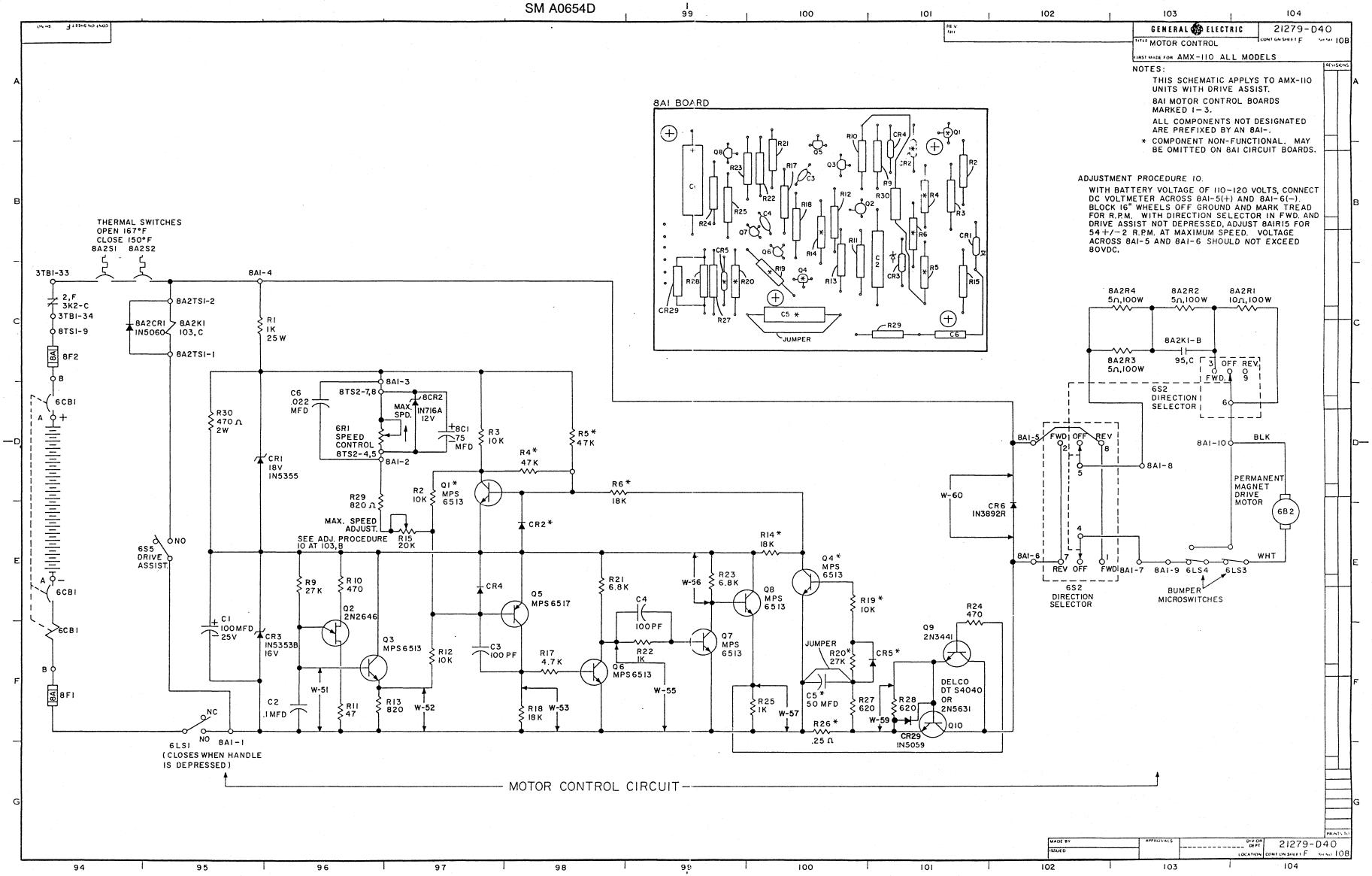

GENERAL ELECTRIC
21279-040
DELAY AND INTERLOCK CIRCUITS
MODELS IICC2CI - 46-165600G1,G2,G3
IICC2DI
ADJUSTMENT PROCEDURE 7:
INVERTER SYNC ADJUSTMENT. CONNECT DUAL CHANNEL SCOPE, CHANNEL 1 TO TOP TERMINAL OF 3C1, CHANNEL 2 TO BOTTOM TERMINAL OF 3C1. SCOPE GROUND TO 3TB1-11 WITH SCOPE NOT GROUNDED THRU LINE CORD. EXTERNAL TRIGGER TO 3TS1-1.
CLOSE ROTOR BUTTON AND OBSERVE WIDTH OF FIRST INVERTER PULSE (MAY OCCUR ON EITHER CHANNEL 1 OR CHANNEL 2). ADJUST 3A4R18 FOR FIRST PULSE WIDTH BETWEEN 2 AND 6 M.S REFER TO FMI 1018 FOR DETAILS.
TO 3CR1 OF 60-HZ INVERTER SEE 14,B
TO J4-17 OF INVERTER DRIVERS SEE 37,B
5SI-A
TO CHARGER SEE 9,B
CHARGE OFF ON
3TB1-24
3TB1-19
3TB1-26
3K2-A
3K2-B
TO 2TB1-2 OF 500-HZ INVERTER SEE 53,D
3F3
2TB1-5
6CB1
ITP2
1CR3 IN5062
IR1 250
120 V BATTERY
5DS1 POWER ON LITE
3CR5 IN1360 24±2V
IC3 900 MFD
2R2 5K
3TB1-2
3J4-13
3A4CR33 IZC24T10 24±2V
8TS1-6
WHT
HAND SWITCH ROTOR BUTTON
S3
BLK
8TS1-5
32,F 8KI-D
3TB1-6
3TB1-5
3F4
TO 4AI-11 OF BATTERY CHARGER SEE 10,F
3TB1-11
BATTERY-
3J4-5
3J4-19
3J4-15
4AI-13
4AI-11
3J4-5
3J4-11
3R1 225
3J4-23
24±2V
3A4CR9 IN5059
3A4CR6 IN5059
3A4R7 1K
3A4C10 68 MFD
3A4CR17 IN5059
3A4R5 2.2K
3A4CR20 C6B
3A4R36 1K
3A4CR34 IN5059
3A4CR35 IN5059
3A4R37 8.2 K
3A4CR21 C6B
3A4C33 .05 MFD
3A4CR40 IN4148
3A4R41 100
3A4R39 1K
3A4R19 1.5K
3A4R18 8.2K
3A4C56 005 MFD
3A4R57 9.1K
3J4-25
3J5-21
3A4Q22 2N2646
SYNC SIGNAL FROM 60-HZ INVERTER (19,F) FMI 1018
3A4CR23 IN5059
3A4C42 10 MFD
3A4K2 82,B
3A4R12 1.5 K
3A4Q25 2N2646
3A4CR24 C6B
3A4CR44 IN4148
3A4R45 100
3A4R43 1K
3A4C46 10 MFD
3A4CR3 IN5059
3A4CR11 IN5059
3A4R54 120 K
3A4R13 75 K
3A4R14 150 K
TO 3J2-21 OF FILAMENT POWER ON SENSOR AT 27,B
3A4Q29 2N697
3A4R50 6.8 K
3A4CR30 IN5059
3A4R31 10K
TO 3J2-31 OF ROTOR POWER ON SENSOR AT 24,F
3A4R49 3.3K
3A4Q28 2N697
3A4CR47 IN5059
3A4R48 10K
TO 3J2-23 OF ROTOR POWER ON SENSOR AT 27,B
TO 3J2-23 OF FILAMENT POWER ON SENSOR AT 27,B
3J1-7
3J1-1
3A4CR26 IN5059
3A4R52 1K
3A4CR51 IN1767 6.8±1V
3A4R27 100
3A4CR16 IN5059
3A4K4 39.F
3A4CR15 IN5059
3A4C53 68MFD
5DS4 READY LITE
3TB1-13
3J4-29
3J4-35
3J4-27
3J4-23
3J4-10
3J4-30
3J4-58,19
BATTERY POWER SUPPLY
INVERTER DRIVER POWER SUPPLY DELAY
60-HZ INVERTER POWER DELAY
2.5 SECONDS EXPOSURE START DELAY
FILAMEMENT AND ROTOR INTERLOCKS STOP READY


GENERAL ELECTRIC
21279-D40
DELAY AND INTERLOCK CIRCUITS
MODEL 46-165600G4 thru G9
Below SN 341608
ADJUSTMENT PROCEDURE 7:
INVERTER SYNC ADJUSTMENT. CONNECT DUAL CHANNEL SCOPE, CHANNEL 1 TO TOP TERMINAL OF 3C1, CHANNEL 2 TO BOTTOM TERMINAL OF 3C1. SCOPE GROUND TO 3TB1-11 WITH SCOPE NOT GROUNDED THRU LINE CORD. EXTERNAL TRIGGER TO 3TS1-1.
CLOSE ROTOR BUTTON AND OBSERVE PULSE WIDTH OF FIRST INVERTER PULSE (MAY OCCUR ON EITHER CHANNEL 1 OR CHANNEL 2). ADJUST 3A4R20 FOR FIRST PULSE WIDTH OF 4.0 M.S.
TO CHARGER SEE 9,B
TO 3CR1 OF 60 HZ INVERTER SEE 14,B
TO J4-17 OF INVERTERS SEE 32,B
5SI-A
CHARGE
OFF
ON
3K1 72,C
3A4K22-B 71,C
3TB1-19
3TB1-24
3TB1-26
3K2-B 2,F
3K2-A 2,F
3F3
1TP2
2TB1-5
6CB1
1K1 25,C
TO 2TB1-2 OF 500 HZ INVERTER SEE 48,D
1CR3 IN5062
5DS1 POWER ON LITE
120 V BATTERY
1R1 250
3C R5 IN360 24±2V
2R2 5K 5W
2TB1-3
IC3 900MFD
3F4
3TB1-11
BATTERY-
TO 4A1-11 TO BATTERY CHARGER SEE 10,F
3A4K36-B 70,E
3R1 225 50W
3A4K36 10,C 69,B
3A4CR37 IZ224TI0 24±2V
8TS1-6
8TS1-5
WHT
BLK
HAND SWITCH ROTOR BUTTON
S3
8K1-D 32,F
3TB1-6
3TB1-5
3J4-5
3J4-19
3A4CR14 IN5059
3A4CR12 IN5059
3A4K22 10,C 14,C 37,B 74,B
3A4R13 1K
3A4R11 2.2K
3A4C23 68 MFD 50V
3A4CR38 C6B
3A4R42 8.2K
3A4R41 1K
3A4CR39 IN5059
3A4C43 .05MFD
3A4CR40 IN5059
3A4R45 1K
3A4CR24 IN5059
3J4-23 14,C 3J,B 66,B
3K1
3A4R7 9.1K
3A4C6 .01MF
3A4R4 8.2K
3A4R18 220
3A4Q9 2N697
3A4R17 470
3A4Q8 2N4990
3A4R21 10K
3A4C35 .47MF
3A4R19 2.7K 10K ON LATER UNITS
SEE ADJUSTMENT PROCEDURE 7 AT 77,A
INVERTER SYN. ADJ
3A4R20 20K
3A4CR44 C6B
3A4R47 18K
3A4C46 .01MF
3J4-21
3J5-21 (20,F SHEET 2B) SYNC SIGNAL FROM 60 HZ INVERTER DRIVER
3A4R25 1.5K
3A4R26 8.2K
3A4CR48 IN4148
TO 3J4-25 (14,D SHEET 2B) 60 HZ INVERTER SWITCH
3A4R50 100
3A4K2 81,B
3A4CR3 IN5059
3A4Q49 2N2646
3A4CR52 IN5059
3A4C51 10MFD 50V
3A4R28 1.5K
3A4Q57 2N2646
3A4CR53 C6B
3A4CR55 IN4148
3A4R56 100
3A4R54 1K
3A4CR27 IN5059
3A4R16 120K
3A4R29 75K
3A4R30 150K
TO 3J2-21 OF FILAMENT POWER ON SENSOR AT 27,B
3A4R69 6.8K
3A4Q61 2N697
3A4CR67 IN5059
3A4R68 10K
3A4CR59 IN5059
TO 3J2-31 OF ROTOR POWER ON SENSOR AT 24,F
3A4R63 3.3K
3A4Q60 2N697
3A4R70 1K
3A4CR64 IN5059
3A4R62 10K
3A4CR65 IN1767 6.8±1V
TO J2-23 OF ROTOR POWER ON SENSOR AT 27,B
TO J2-23 OF FILAMENT POWER ON SENSOR AT 27,B
3A4C58 10 MFD 50V
3J1-7
3J3-1
3A4K2-B 79,B
3TB1-13
5DS4 READY LITE
4A1-11
3A4C66 68MFD
3A4CR32 IN5059
3A4K5 39,F
3A4CR33 IN5059
3J4-35
3A4R31 100
3J4-23
3J4-27
3J4-29
3J4-1
3J4-3
24±2V
BATTERY POWER SUPPLY
INVERTER DRIVER POWER SUPPLY DELAY
60-HZ INVERTER POWER DELAY
60-HZ INVERTER SYNCHRONIZATION CIRCUIT
2.5 SECONDS EXPOSURE START DELAY
FILAMENT AND ROTOR INTERLOCKS STOP READY


GENERAL ELECTRIC
21279-D41
DELAY AND INTERLOCK CIRCUITS
MODEL 46-165600G4 thru G9
SN 341608 and Above
ADJUSTMENT PROCEDURE 7:
INVERTER SYNC ADJUSTMENT. CONNECT DUAL CHANNEL SCOPE. CHANNEL 1 TO TOP TERMINAL OF 3C1, CHANNEL 2 TO BOTTOM TERMINAL OF 3C1. SCOPE GROUND TO 3TB1-11 WITH SCOPE NOT GROUNDED THRU LINE CORD. EXTERNAL TRIGGER TO 3TS1-1.
CLOSE ROTOR BUTTON AND OBSERVE PULSE WIDTH OF FIRST INVERTER PULSE (MAY OCCUR ON EITHER CHANNEL 1 OR CHANNEL 2). ADJUST 3A4R20 FOR FIRST PULSE WIDTH OF 4.0 M.S.
BATTERY POWER SUPPLY
INVERTER DRIVER POWER SUPPLY DELAY
60-HZ INVERTER POWER DELAY
60-HZ INVERTER SYNCHRONIZATION CIRCUIT
2.5 SECONDS EXPOSURE START DELAY
FILAMENT AND ROTOR INTERLOCKS STOP READY


GENERAL ELECTRIC
21279-D40
TRIGGER AND REGULATION CIRCUITS
FIRST MADE FOR AMX-110 ALL MODELS
SLIDER IS DRIVEN BY KNOB OF 5S3 MAS SELECTOR
MAS → 1.0 2.0 3.0 5.0 8.0 12 20 32 48 80 150 250
-MAS → 1.5 2.5 4.0 6.0 10 16 24 40 64 100 200 300-
5S3B
5S3A
TO 3TBI-21 AT 86,C
3JI-19
3JI-17
TO 3TBI-20 AT 86,D
5S3 TIME SELECTOR
(TIME = MAS / 100)
ADJUSTMENT PROCEDURE 8:
CONNECT SCOPE ACROSS 2TBI-1 AND 2TBI-3. MAKE EXPOSURES AT 60-KVP, 100-MAS. ADJUST 3AIR4 FOR 1 ±0.01 SECOND TIME INTERVAL AS SHOWN IN W37.
ADJUSTMENT PROCEDURE 9:
CONNECT SCOPE BETWEEN EMITTER OF 3AIQ48 AND 3TBI-11 ADJUST 3AIR20 UNTIL 3AIQ48 BREAKS INTO OSCILLATION FROM A STEADY VOLTAGE CONDITION. RECORD VOLTAGE. READJUST 3AIR20 TO REDUCE EMITTER VOLTAGE 3.5 TO 4.0V AS SHOWN IN W38.
3TBI-36
JI-3
3J4-23
3JI-31
3TBI-35
3J4-29
3TBI-13
3JI-23 24±2V
3C5 1 MFD
86,F 3AIK7
3AICR8 IN5059
JI-25
3K3 3 SEC. TIMED OPEN
3AIR2 1.0K
3AIC3 .47 MFD
3JI-21
3AICR13 IN5059
3AIR4 500
TIMER ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO. 8 AT 92,B
3JI-19
3TBI-21
5S3B-13
MAS SELECTOR SHOWN AT 82,A
5S3B-2
3TBI-20
3JI-17
3AICR5 IN5059
3AIR16 2.2K
3AIR6 330
3AIR40 4.7K
3AIR41 1K
3AIR69 22K
3AICR39 IN5059
3AIQ17 2N6718
3AIC11 .01 MFD
3AIR12 2.2K
3AICR68 IN5059
3AIC30 4 MFD
3AIC10 .1 MFD
3AICR31 IN5059
3AIR15 910
3AICR14 IN5059
3AIR49 1.5K
MA OVERLOAD ADJUSTMENT SEE ADJUSTMENT PROCEDURE NO. 9 AT 91,B
3AIQ48 2N2646
3AIR32 8.2K
3AIR21 1.5K
3AIR20 5K
3AIR22 3.3K
3AICR23 IZC24T10 24±2V
3AIC25 47 MFD
3AIR24 470
3AICR26 IN5060
3JI-27
3AIC33 47 MFD
BRN TO 3CR3 AT 21,C
BLU/WHT TO 3CRI-15 AT 14,B
YEL
3T3 PRI POWER FOR MA OVERLOAD CIRCUIT FROM 60-HZ INVERTER
3T3 SEC 3 35VRMS 60-HZ
BLK TO 3CR2 AT 21,G
3JI-35
SIGNAL PROPORTIONAL TO MA AT ITPI 38,E
MA OVERLOAD
3AICR45 IN4148
3AIC34 .05MFD
3AICR44 IN4148
3AIR43 1K
3AIR50 100 K
3AIC51 0.1 MFD
W38
3AIR46 100
3AIT18
3AIR19 100
W34
TO 3TBI-11 35,G
SIGNAL THAT SHUT OFF CAPACITORS ARE CHARGED FROM 3R6 SEE 40,E
J4-35
3JI-15
3AICR28 C6B
3AIR64 22K
3J6-4
3AIR42 2.2K
3AICR35 IN5059
3AICR36 IN5059
3TBI-3
3JI-9
3AIC38 47 MFD
3JI-5
3J6-7
3AIR55 3.3 K
3AIR57 47K
3AICR53 IN5059
3AIR59 47K
3JI-33
3AICR9 IN5060
3AIR27 22K
3AI161 NE-76
SIGNAL FROM 3J3-35 OF 500-HZ INVERTER DRIVER SENSOR SEE 49,D
3AICR54 IN5059
3AIQ56 2N697
3AIC62 .001 MFD
3JI-29
3AIQ60 2N697
3AIR52 4.7K
3AIR58 4.7K
3TBI-4
8TSI-4 GRN
HAND SWITCH X-RAY PUSH BUTTONS
S1 S2
BLK
8TSI-5
3TBI-11
3A6T3 SEE W35
TO 3J6-2 AT 38,C
TURN ON SIGNAL TO 500-HZ INVERTER SEE WAVEFORM W35
TO 3J6-1 AT 39,C
3AICR63 IN5059
3J6-3
83,C 3AIK7-A
W36
3A6T5
TO 3J6-6 AT 40,E
EXPOSURE STOP SIGNAL TO 2CRI SEE 36,E
TO 3J6-5 AT 40,D
3J6-3
3J6-11
3J4-5
3J4-19
3JI-7
EXPOSURE START PULSE TRIGGER
TIMER
STOP PULSE TRIGGER
MA OVERLOAD TRIGGER
SYNCH PULSE GATE
SHUTOFF CAPACITOR CHARGE GATE


GENERAL ELECTRIC
21279-D21
MOTOR CONTROL
FIRST MADE FOR AMX-110 ALL MODELS
SEE ADJUSTMENT PROCEDURE 10 AT 102,B
THIS SCHEMATIC APPLYS ONLY TO AMX-110's WITH MOTOR CONTROL BOARD MARKED "1-2".
SERIAL NUMBERS 202644, 202646,202648,202649, AND ABOVE 202911.
8A1 BOARD
THIS SCHEMATIC APPLYS TO AMX-110'S WITH MOTOR CONTROL BOARD MARKED "1-2". REFER TO FMI1076. UNITS WITHOUT DRIVE ASSIST
Adjustment Procedure 10
With Battery Voltage of 110 to 120 V connect DC voltmeter across 8A1-5(+) and 8A1-6(-). Block 16" wheels off ground and mark tread for RPM. Adjust 8A1R15 not to exceed 80 VDC. If 8R2/8R3 are used adjust after 8A1R15.
Test Condition | Adjustment | Voltage | RPM
Full Speed FWD | 8A1R15 | 75 +/- 5 | 45 +/- 7
Slow Speed FWD | 8R3 | 20 +/- 5 | 14 +/- 5
Full Speed REV | 8R2 | 25 +/- 5 | 17 +/- 7
COLUMN INTERLOCK (SLOW SPEED) 6LS5
IN LINE CONNECTIONS
MAX. SPEED ADJUST. SEE ADJ. PROCEDURE 10 AT 102,B
* SELECTED TO OBTAIN FREQUENCY OF 350 TO 500 HZ
6LS1 (CLOSES WHEN HANDLE IS DEPRESSED)
MOTOR CONTROL CIRCUIT
6S2 DIRECTION SELECTOR
PERMANENT MAGNET DRIVE MOTOR
BUMPER MICROSWITCHES
DELCO DTS4040 or 2N5631
CR6 GE IN3892R
Q1 MPS 6513
Q2 2N2646
Q3 MPS6513
Q4 MPS 6513
Q5 MPS6517
Q6 MPS6513
Q7 MPS 6513
Q8 MPS 6513
Q9 GE 2N3441
Q10
CR29 IN5059
CR1 IN5355
CR2
CR3 1N5353B
CR4
CR5
8CR2 IN716A 12V
R1 1K 25W
R2 10K
R3 10K
R4 47K
R5 47K
R6 18K
R9 27,K
R10 470
R11 47
R12 10K
R13 820
R14 18K
R15 20K
R17 4.7K
R18 18K
R19 10K
R20 27K
R21 6.8K
R22 1K
R23 680
R24 470
R25 1K
R26 .25 Ω 25 W
R27 620
R28 620
R29 820
C1 100 MFD 25V
C2 .1MFD
C3 100 PF
C4 100PF
C5 50 MFD
C6 .022
8CI 75MF
6R1 25K SPEED CONTROL
8R1 15K
8R2 100K
8R3 100K
8R4 6.2K
6R2 18K
6CB1
8F1
8F2
3K2-C
6B2
W-51
W-52
W-53
W-54
W-55
W-56
W-57
W-58
W-59
W-60
W-61
W-62
GREEN
BLK
WHT
REVISIONS
PRINTS TO
MADE BY
ISSUED
APPROVALS
DIV OR DEPT
LOCATION
CONT ON SHEET F
SH NO 10A


GENERAL ELECTRIC 21279-D40
MOTOR CONTROL
FIRST MADE FOR AMX-110 ALL MODELS
NOTES:
THIS SCHEMATIC APPLYS TO AMX-110 UNITS WITH DRIVE ASSIST.
8AI MOTOR CONTROL BOARDS MARKED 1-3.
ALL COMPONENTS NOT DESIGNATED ARE PREFIXED BY AN 8AI-.
* COMPONENT NON-FUNCTIONAL. MAY BE OMITTED ON 8AI CIRCUIT BOARDS.
ADJUSTMENT PROCEDURE 10.
WITH BATTERY VOLTAGE OF 110-120 VOLTS, CONNECT DC VOLTMETER ACROSS 8AI-5(+) AND 8AI-6(-). BLOCK 16" WHEELS OFF GROUND AND MARK TREAD FOR R.P.M. WITH DIRECTION SELECTOR IN FWD. AND DRIVE ASSIST NOT DEPRESSED, ADJUST 8AIR15 FOR 54+/-2 R.P.M. AT MAXIMUM SPEED. VOLTAGE ACROSS 8AI-5 AND 8AI-6 SHOULD NOT EXCEED 80VDC.
8AI BOARD
JUMPER
THERMAL SWITCHES OPEN 167°F CLOSE 150°F
8A2S1 8A2S2
3TBI-33
8AI-4
2,F 3K2-C
3TBI-34
8TSI-9
8F2
6CBI
8A2TSI-2
8A2CRI IN5060
8A2KI 103,C
8A2TSI-1
R1 1K 25W
C6 .022 MFD
8TS2-7,8
8AI-3
6CR2 IN716A 12V
MAX SPD.
6RI SPEED CONTROL
8TS2-4,5
8AI-2
8C1 75 MFD
R3 10K
R4* 47K
R5* 47K
R30 470Ω 2W
CRI 18V IN5355
R29 820Ω
R2 10K
Q1* MPS 6513
R6* 18K
MAX. SPEED ADJUST.
R15 20K
SEE ADJ. PROCEDURE 10 AT 103,B
CR2*
6S5 DRIVE ASSIST
NO
NC
R14* 18K
Q4* MPS 6513
R9 27K
R10 470
Q2 2N2646
CR4
Q5 MPS6517
R21 6.8K
C4 100PF
R22 1K
W-36
R23 6.8K
Q8 MPS 6513
R19* 10K
R24 470
C1 100MFD 25V
CR3 IN5353B 16V
Q3 MPS6513
R12 10K
C3 100 PF
R17 4.7K
Q6 MPS6513
Q7 MPS 6513
JUMPER
R20* 27K
CR5*
Q9 2N3441
C2 .1MFD
R11 47
R13 820
W-51
W-52
W-53
W-55
W-57
W-59
R18 18K
R25 1K
C5* 50 MFD
R27 620
R28 620
DELCO DT 54040 OR 2N5631
Q10
R26* .25Ω
CR29 IN5059
6LS1 (CLOSES WHEN HANDLE IS DEPRESSED)
8AI-1
MOTOR CONTROL CIRCUIT
8A2R4 5Ω,100W
8A2R2 5Ω,100W
8A2RI 10Ω,100W
8A2R3 5Ω,100W
8A2KI-B
95,C
OFF REV FWD
6S2 DIRECTION SELECTOR
8AI-5
8AI-10
BLK
W-60
CR6 IN3892R
FWD OFF REV
8AI-8
PERMANENT MAGNET DRIVE MOTOR
6B2
8AI-6
REV OFF FWD
8AI-7
8AI-9
6LS4
6LS3
WHT
BUMPER MICROSWITCHES
6S2 DIRECTION SELECTOR
21279-D40